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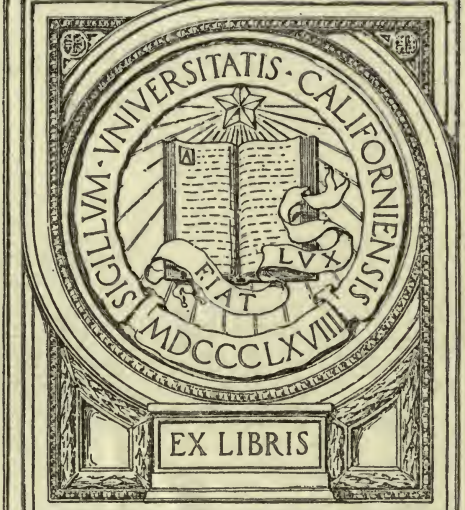
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UNITED STATES STEEL

A Corporation With a Soul

PUBLISHER'S NOTE

THIS book is planned as an open and above-board presentation of the development of a great business. The story of the steel industry is the story of the United States Steel Corporation; one cannot be told without the other. It is hoped that this frank presentation of facts about our greatest corporation gathered from the records of the company will be of interest to the general reader.

ELBERT H. GARY

"The story of United States Steel is the tale of how Gary made his dream come true"

UNITED STATES STEEL

A CORPORATION WITH A SOUL

BY

ARUNDEL COTTER

GARDEN CITY, N. Y., AND TORONTO
DOUBLEDAY, PAGE & COMPANY
1921

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GIFT

TO MY
MOTHER

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FOREWORD

When, in 1914-1915, I wrote "The Authentic History of the United States Steel Corporation," which has been enlarged and brought up to date in the present volume, the Government's suit for the dissolution of the Corporation had not been decided. In fact, the lower court handed down its decision just about the time the book was going to press.

It was my good fortune to hear the testimony of the most important of the more than 400 witnesses and argument of counsel in the suit and to supplement the information so gained by conversations with steel men, inside and outside the Corporation, with whom my work brings me in constant contact. And all that I learned convinced me more and more that the big company was not illegal, either technically or morally, and that, in fact, its influence on industry was beneficent. It is naturally a matter of personal gratification that the suit has resulted in the complete vindication of the Corporation.

We live in a day of big corporations and the tendency seems to be to concentrate still more capital and manufacturing facilities. It is therefore important that we should know something of their activities, not only economic but social.

I believe that the United States Steel Corporation is one enterprise that endeavors always to live up fully to the responsibilities it must perforce assume to its employees and to the public, as well as to its stockholders. I believe that it has earned the title of "A Corporation With A Soul". And, so believing, I have not hesitated to tell the story of United States Steel as I have learned it by years of personal observation and contact.

Arundel Cotter.

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UNITED STATES STEEL

PROLOGUE

THE MAN AT THE HELM

EVERY business enterprise, however great, reflects in its dealings with its competitors, customers, employees, and the public generally, the individuality of some one man. Curious as it may seem at first glance, this personal touch, far from being lost, is particularly evident in the greatest of all business enterprises, the United States Steel Corporation.

Many men, including some of the ablest financiers the country has produced, have assisted in a measure in making the Corporation what it is to-day. Morgan, Frick, Perkins, all these and others, have helped with their counsel in bringing the Corporation to the pre-eminent place it holds in the industrial world. But one man has stood out among all these—Elbert H. Gary, its chairman and chief executive officer.

Throughout its ramifications the Steel Corporation is everywhere a reflection of Gary's spirit. His influence, from the time of its incorporation nearly twenty years ago, has shaped its policies and, almost from the beginning, has dominated its counsels. For what the Corporation is, whether good or bad, Gary must accept full responsibility.

Judge Gary himself would probably object to the use of the word "dominated." He would doubtless prefer "guided", for his dominance has never been autocratic. But his

colleagues, except perhaps in the earlier days, have confidently accepted his opinion on all matters pertaining to the Corporation's welfare. And the events of the last few years have proven that they were right in so doing.

Not the Corporation alone but the entire steel trade, the most important manufacturing industry in America, has benefited from Gary's wisdom. As the chief executive officer of the leading interest in the industry his competitors have always looked to him for leadership in periods of stress. And whenever occasion arose, as in the dark days of the panic of 1907, he proved his right to lead.

There have been times when this leadership was in question if not doubt. One such occasion was as recently as 1919 when the great steel strike threatened.

Gary's attitude toward labor was well known. He believed in "leaning over backward" in the matter of giving justice to the worker. And when union organizers and radical agitators attempted to force the closed shop on the industry many of his competitors feared that he would yield to the demands of the labor organizers.

But Gary had never flinched from responsibility, however great. Here was a question of principle involved, concerning not the rights of the employer alone but those of the very large number of unorganized workers. Although pressure was brought to bear upon him from high quarters to compromise and avoid a strike, and later to settle it once begun, the head of the Corporation unswervingly stood his ground and led the steel trade to a signal victory. He proved to those who doubted him that, though he might usually adopt the attitude of "suaviter in modo" he knew how to assume that of "fortiter in re" when occasion warranted.

On October 24, 1919, the annual meeting of the American Iron and Steel Institute was held in New York City, at the Hotel Commodore. Some sixteen hundred of its members,

including the majority of the leading figures in the steel trade, attended. The steel strike had been going on for some weeks and the steel men were gathered to hear what Gary had to say.

The entrance of the Judge into this gathering was the signal for a most remarkable demonstration. For these staid, solid business men, on catching sight of Gary, broke into a spontaneous salvo of cheers which was enthusiastic and prolonged. It was a tribute to his generalship in the struggle then being waged, an unequivocal admission of his right to supreme command. In that storm of cheers were buried all doubts that may ever have been entertained.

It is impossible to write of the Steel Corporation without writing of its head. His influence on it is too direct, too personal, to be ignored. The Corporation, in a sense, is Gary. He has infused it with his spirit, a spirit which, it is to be hoped, will continue always to animate it.

CHAPTER I

THE WHY AND HOW OF THE BIG COMPANY

MERE size, to the majority of us, presents a certain fascination. Especially is this the case when it is the result of human endeavor. Hence, were the United States Steel Corporation nothing but the largest business aggregation in the world its immensity alone might justify placing upon record the facts connected with its formation and its subsequent history.

The Corporation's vast capitalization, a billion and a half of dollars, its yearly turnover exceeding its capital, its payroll of 275,000 workers, or, with their families, enough to populate a large city, its productive capacity of more than 16,000,000 tons of finished steel annually—to say nothing of other products—the volume of freight carried in its fleet of ore boats, several times the tonnage passing through the Suez Canal, its foreign trade of two hundred million dollars—these alone might make the Corporation's history worth the telling.

But size, properly considered, is of minor importance in itself. Its importance lies in the power it bestows to influence its surroundings. The greatest of all industrial enterprises could not fail to affect industrial history generally. And the management of the Corporation has recognized its responsibility in this regard and has endeavored to use its strength not selfishly but for the good of all concerned. It is not too much to say that the organization of the United States Steel Corporation marked the beginning of a new and a better era in industrial history.

That this assertion may be challenged goes without saying. But the facts will be permitted to speak for themselves.

The United States Steel Corporation was, in a modified sense, an experiment in popular ownership, the ownership of industry by the worker; it substituted for the ownership by a few men of a number of more or less important organizations one gigantic unit owned by a multitude. To-day the Corporation's stockholders number around 160,000, and this figure includes only holders of record. Perhaps 75,000, possibly more, of its employees either own stock outright or are buying it on the instalment plan. Counting five to the family it is probable that close to 1,000,000 people are financially interested in the success or failure of the Corporation.

At the time of the big company's birth corporate publicity was practically unknown. Important developments affecting the interests of security holders were announced, if announced at all, at the convenience of the so-called insiders. Curiosity into corporate affairs was discouraged. But the new business giant set the example of publicity by giving out at stated and frequent intervals detailed information regarding profits, business on hand, and other facts of interest to stockholders and the investing public. This example was later followed by other important steel companies and, with the passage of the years, the practice has become fairly general among large corporate enterprises. Thus the organization of the Steel Corporation may be said to mark the beginning of the era of corporate publicity.

But the most marked effect of the Corporation's organization was probably that respecting competition. In the old days of the steel trade competition had been ruthless. The big steel merger, if the sworn statements of its competitors may be accepted, put an end to this and substituted an era, of competition still, but of competition clean and above board, governed not solely by greed but by the spirit of fair

play between manufacturer and manufacturer. It brought the dawn of the epoch of the square deal between industrial competitors.

In order to get a true perspective on the events immediately leading up to the formation of the United States Steel Corporation, it is necessary to review briefly the history of the steel industry in the United States during the latter half of the nineteenth century, and especially during its closing decade.

In a short half century steel making in America had grown from the age of swaddling clothes to full manhood, or rather gianthood. It stood supreme among industries. From being unimportant among the iron and steel producing nations, the United States, in a comparatively few years, had forged its way to the first place. Its steel mills turned out nearly half of the hard metal used by the world. Steel, from being an industry composed of a few scattered mills situated as nearly as possible to ore deposits with little regard to markets, had become one consisting of great corporate entities each made up of many plants, and these had in their service railroads and steamships plying to and from ore fields situated sometimes hundreds of miles from the plants, bringing to the mills such quantities of the raw metal as but a short time before had not been known to exist. It had bent to its use every modern invention, the newest discoveries of science. Fortunes had been spent, won, and lost in building up these great structures. It had at the same time been an industry subject to the most amazing fluctuations, periods of feast being followed closely by periods of famine.

This half century, or the last two decades of it, was, as has been suggested, a period of war to the hilt between manufacturer and manufacturer, war in which no quarter was asked or given. The history of the steel industry in America bristles thick with the names of millionaires who worked their way to fortune from the slag pile. And for every one

of these there were many, whose names are forgotten, who sacrificed health, strength, and fortune in the mad fight for the wealth that poured in unstinted stream from the glowing furnaces of molten iron. The law of steel was essentially that of the survival of the fittest.

Perhaps there is no other great industry that has been so subject to fierce and unrestrained competition as steel making once was. To understand why this is so it is necessary to get an idea of the conditions influencing it. The discovery of the Bessemer process—about the middle of the nineteenth century—by which steel could be made cheap enough to permit of its general use found a world more than ready for it, and the demand for the metal grew by leaps and bounds. The Age of Steel did not dawn; like the tropic day, it broke with fierce glare. The sudden demand naturally opened up vistas of previously undreamed-of wealth for those who could supply it, and, in the desire to secure this wealth, production sprang forward so quickly as even to outstrip demand, strong and increasing as it was. Then ensued the inevitable battle for what business there was, a battle that lasted until consumption took another spurt, which, in turn, resulted in quickening output and a resumption of the battle.

At that time the country was just opening up. Railways were stretching their lines into the golden regions of the West; manufacturers of farm implements were calling for steel to be fashioned into tools to reap the rich crops of the wide prairie lands; inventors were each day evolving some new use for the metal. Was it any wonder then that steel became a world necessity and that the blast furnace became a philosopher's stone that transmuted dull ore into precious gold? More and larger fortunes, it has been truly said, were made out of steel in the second half of last century than ever came out of the mines of the West or the diamond deposits of South Africa. And in the insane struggle for this so-freely-poured-out wealth men lost all sense of proportion.

It is inevitable that there should be a dark side to the picture. The boom times of the steel trade were succeeded with disheartening regularity by periods of dearth. One year steel manufacturers were building themselves palaces and purchasing steam yachts, the next they were mortgaging all they had to pay wages. One year the steel worker was a man favored above all others of his class, the next he was getting his meals on charity from the "soup houses." To this day steel veterans speak of the dull times of the trade as "soup-house days."

At these times competition, always fierce, became more ruthless than ever. The old adage regarding love and war was stretched to include the steel industry, and everything was considered fair that might help to keep the mills running full. Prices were cut—and wages with them; steel was "dumped" on foreign markets at less than manufacturing cost, and steel makers resorted to every means that offered to divert orders from competitors to themselves. It was case of dog eat dog, and failures, with their unavoidable accompaniment of unemployed labor, were all too frequent.

These were the days when the steel "pools" flourished. These pools were simply attempts on the part of the steel makers—who thoroughly realized that the killing competition just described could benefit no one—to protect themselves in times of stress by binding each other not to sell below a certain price or more than a specified tonnage, and by making it of no avail, from a viewpoint of profit, to do so. There were rail pools and wire pools, shafting pools and plate pools, structural pools, horseshoe pools, and in fact a separate and distinct pool for nearly every steel product made. These pools were merely treaties, but treaties in which no participant trusted the other and which consequently were usually broken by each as soon as the opportunity to get ahead of his fellow pool member presented itself—lest the other should get a similar opportunity first and take advantage of it.

It is doubtful if a single pool agreement, and their number was infinite, was ever honestly kept. Old steel makers chuckle to-day as they relate how each representative of a company taking part in a pool sought to gain an advantage over his competitors while the agreement was yet a-borning. Listening to them one begins to wonder if these were indeed men who bore high and honorable reputations in the business world.

According to the statements of men who themselves took part in pools it was no uncommon thing for a manufacturer to station a salesman outside the building where a conference was being held and, as soon as a price settlement was reached, to stroll casually over to a window and by pre-arranged signal indicate to him the level agreed on, whereupon the salesman would proceed to undercut the price which his employer was even then pledging himself to maintain.

"Every man's hand was against his neighbor then; we were all Ishmaelites, every one of us," said John Stevenson, Jr., a veteran who had worked under Carnegie, in his testimony in the Federal suit for the dissolution of the Corporation. Mr. Stevenson then went on to relate the story of a wire pool conference at which a price of $1.50 a keg for nails had been agreed on. After the morning conference he went to the telegraph office to wire his partner and found one of his fellow conferees there. He waited until the other had handed in his message and walked away. While Stevenson was writing his own wire the operator, in mistake, handed him his competitor's, asking him to decipher a word. And Stevenson discovered that the message was an offer to a large consumer to sell him 10,000 kegs of nails at $1.40! Whereupon he tore up the paper and substituted a bid of his own at the same price and got the order!

Another instance, related by a large consumer, shows how these agreements were evaded. He said that the company from which he purchased his supplies of steel pleaded the force of a pool agreement as an excuse against giving him a

discount from the market price. He then suggested that he be appointed agent of the steel company in his town at a commission of a dollar a ton and this solution of the difficulty was agreed to. He was the only consumer of steel in the town and the commission was only a round-about way of giving him the discount asked.

In the fierce and bitter struggle that was the steel trade only the most daring or the most unscrupulous manufacturer could survive, and under the strain for production that it necessitated only the strongest workers could live. No one, unless he has been through a steel plant, can imagine the conditions under which the steel maker works. The visitor, unaccustomed to the heat that is flung from blast furnace or rolling mill as from the gates of hell, must perforce hold his hands before his face at times to mitigate the frying sensation. True, much has been done of recent years to make the lot of the man at the furnace or rolling mill easier, his work less trying on his health. But at the time of which this is written such was not the case. Under the most favorable conditions the steel mill, as a well-known steel maker said once, is far from being a drawing room. Under the conditions that prevailed toward the end of the last century, when men were worked to the breaking point in the mad fight for "tonnage," it was no wonder that the majority of steel workers collapsed early under the strain and were thrown on the human scrap pile, their vitality sapped and their youth gone.

The one slogan of the industry then was "tonnage." Everything was sacrificed by the manufacturer to this single end. Machinery, comparatively new, was scrapped to make room for more modern equipment. Waste of this kind was not considered. Production was everything, and nothing was spared to obtain increased output. And it must be admitted that to this attitude on the part of producers, as much perhaps as to her immense natural advantages, the United States owed her rapid rise to the front rank of steel nations.

In the middle of the nineteenth century American steel making was in its infancy. In fact, this is also true of the steel industry of the whole world, for it was about this time that William Kelly in America and Henry Bessemer in England discovered what is known as the Bessemer process, which made the metal available for the numberless commercial uses to which it is now put. As late as the early sixties the idea of using steel for railroad rails was scoffed at. In 1867 there were only three Bessemer plants in this country and open-hearth, the steel of to-day, was unknown. Great Britain supplied the world's steel. But shortly after the third quarter of the century was passed the United States forged to the lead, and has held it ever since. In the year 1900 the steel production of this country was 10,188,329 tons, Germany coming next with 6,645,869 tons, and Britain third with a production of 4,901,060 tons. In 1913 the United States produced 31,300,874 tons of steel, or more than Britain and Germany combined. In 1917 production was 45,060,607 tons, more than two thirds the world output. To-day the rolling mills of the Pittsburgh district alone turn out more than one third of the world's steel.

The name of Andrew Carnegie is inextricably bound up with the history of steel in the United States—and the world. "The Iron Master," the "Steel King"—by these names he was known, and he earned them. For more than a quarter of a century Carnegie was the most important and spectacular figure in the world of steel and his name will not be forgotten so long as there is a rolling mill in Pittsburgh.

Carnegie's rise from utter obscurity until he became the dominating figure in the leading manufacturing industry of the world reads like a page of fiction. Only the briefest sketch can be given here. Born in Dumferline, Scotland, in 1835, the future Monarch of Steel came to the United States with his father at the age of thirteen and began at the bottom of the ladder, his first job being that of bobbin boy in

a cotton mill, for which he received a weekly wage of $1.20. Two years later he became a telegraph messenger and later an operator for the Pennsylvania Railroad.

The youthful Scot's ability soon attracted the attention of Col. Thomas A. Scott, head of that great railroad system, and he made Carnegie his private secretary, thus giving him his first foothold on the ladder of fortune.

Industrious and saving Carnegie was soon in the investor class and when an opportunity arose to invest in what, it seemed to him, was an attractive business he was able to seize it, purchasing a one-sixth interest in the Iron City Forge Co. and becoming his own man.

One of his partners in the enterprise was Henry Phipps, the playmate of his boyhood and his friend through good fortune and through bad. In every one of his subsequent ventures Phipps had a share, and an important one, that of raising money to carry out Carnegie's manufacturing plans. In Pittsburgh they say that Phipps' horse knew every bank in town so often had his master stopped him before them when seeking loans.

Those were the days of iron. Steel was still being made only "by the spoonful." But one day Carnegie saw in action one of the earlier Bessemer converters, the implements that gave birth to the Age of Steel, and this sight, impressive as it is even to the layman as a mere spectacle, converted him from iron to steel. His keen mind saw immediately the immense possibilities of the new process and he went into the manufacture of steel on a large and growing scale.

And his success was phenomenal. Breaking down all obstacles in his path to fortune he fought his way upward ruthlessly and became a terror to competitors.

In 1901 Carnegie sold out the steel business he had created to the organizers of the United States Steel Corporation for $303,450,000 in 5 per cent. bonds and $188,556,160 in pre-

ferred and common stocks of the new company, a total price of $492,006,160!

The mark that Carnegie left on the industry will never be wiped out. In his late days he set the pace for all to follow, and it was a fast one. Although pitiless to his competitors he had the gift of drawing to him men of high ability; he was a wonderful judge of men, and to his intimates he was generous and open. A born commander, a Napoleon of industry, he built up an organization that had no equal in its day, one that was at the same time extremely efficient and utterly loyal.

Whether Carnegie made the best use possible of his unquestioned abilities is for posterity to decide. Beyond doubt America's pre-eminence in steel was due largely to him. But he was also at least partly responsible for the unstable condition that existed in the trade of his day. Production, tonnage, was his fetish, for in this he saw the means of reaching and keeping his supremacy, and to get it he did not spare himself, the men under him or, least of all, his competitors. His one effort was to keep the mills running full, and everything was subordinated to that.

It is not generally recognized that Carnegie was to some extent responsible for the formation of the United States Steel Corporation. The part he played was behind the scenes. He wanted to sell out and retire, to devote the rest of his life to philanthropy, education, and the promotion of world peace. Even for such a master salesman as he the task of finding a customer was gigantic, but he succeeded as he usually did.

The frequent and prolonged periods of depression had forced upon steel makers the conviction that some way of combining to prevent their recurrence was desirable, even necessary, if the United States was to keep and increase its lead in the manufacture of the metal most needed by the age. Between the years 1890 and 1900 industrial combi-

nations were as thick as the leaves in autumn. And steel had not escaped this tendency to amalgamate. The Federal Steel Company, with $100,000,000 issued capital, was the first large steel consolidation. The country's wire plants had been merged gradually into one company, the American Steel and Wire Company of New Jersey, which controlled all but a small number of mills. A somewhat similar situation existed in regard to tin plate, tubes, and fabricated products. What might be called the steel companies proper were themselves all mergers of small plants, the trade being divided among several large competing units. A merger of these units had been talked of time and again and its accomplishment was considered inevitable, sooner or later, unless Carnegie first succeeded in crushing all competition and establishing a virtual monopoly for himself, as many thought he would. The time was ripe for a big steel combine.

And the time being ripe, the man was provided, the man destined to take Carnegie's place as the central figure in the steel industry, not only of this country but of the world. He was Elbert H. Gary, then president of the Federal Steel Company, one of the Carnegie company's largest and most important competitors, whose operations centred in the Chicago district.

Born on a farm near Wheaton, Ill., and educated to the practice of the law, Gary's work brought him into connection with many large corporations including the Consolidated Steel and Wire Company and the Illinois Steel Company, for which he was general counsel. When the Federal Steel Company was organized in 1898 as a merger of the Illinois and other companies, Gary, then a director of the Illinois company, took the principal part in the organization activities. The executive ability he displayed so impressed his associates and the Morgan interests, who financed the merger, that he was unanimously chosen president of the new company. His selection for this post, coming as a great surprise

to himself, first gave him a prominent part on the industrial stage, on which he has been the most striking figure almost ever since.

Gary's ambition, like Carnegie's, knew no bounds; but where the little Scotch ironmaster worked to make the steel industry an empire over which he should reign supreme, Gary dreamed of an immense Republic of Steel. Where Carnegie sought to unify the control of the steel trade and bring it into his own hands, Gary sought to make the industry one owned by the people, and particularly by the workers. Where Carnegie stopped at the ocean and gave his attention to world business only at times when overproduction at home compelled him to seek foreign markets temporarily, Gary sought to establish a world-wide and permanent market for the product of the blast furnaces and rolling mills of the United States.

And the history of the United States Steel Corporation is the story of how Gary made his dream come true.

But the Federal Steel Company, its president soon found, was not an instrument big enough or suitable for the carrying out of his plans. In the first place, its plants were located at too great a distance from the Atlantic seaboard to render an invasion of foreign markets feasible. Freight rates to the ocean were prohibitive. And another hindrance was encountered in the severe ups and downs to which the steel trade in this country was subject. He saw that, if his dreams were ever to be made realities, the Federal Steel Company must be enlarged and expanded, must provide itself with plants able to export steel in competition with Great Britain and Germany, the countries which ruled the international markets, and must so strongly entrench itself that it would not be too greatly affected by periods of stress.

One man there was who could provide the wherewithal for the expansion which the head of the Federal Steel Company considered necessary. This was the late J. Pierpont Morgan.

To Morgan, then, Gary took his plans, but the banker was not enthusiastic. Perhaps he saw that many steel concerns were not making money and feared to put so large an amount of capital as was required into the venture; perhaps other motives governed him; but, whatever his reasons, the great financier hesitated, would not permit himself to be convinced. Again and again Gary tried to persuade Morgan, but in vain, and at length Gary, satisfied that he must seek other means to his end, turned his attention toward raising the necessary capital elsewhere. He had already prevailed upon his fellow directors of the Federal Steel Company to pledge subscriptions to a large sum for the purchase or erection of new plants when circumstances played into his hands. Morgan decided to give his backing to the formation of a giant steel merger on the lines Gary had proposed.

The story of how Morgan was won over is an interesting one. It has already been suggested that Carnegie was anxious to sell out, and Carnegie usually got what he wanted. After many attempts to conclude a satisfactory deal with different syndicates Carnegie, like Gary, arrived at the conclusion that Morgan, and Morgan alone, was able to finance the purchase of his properties. Therefore, he decided Morgan must be induced to buy.

At first Carnegie tried ordinary tactics. He had mutual acquaintances suggest to the banker the advisability of a deal by which the Carnegie company would be absorbed. Time and again this suggestion was made, and on each occasion Morgan listened then sent for Gary. The latter, seeing that this would be an excellent means of accomplishing what he desired for the Federal company, as by absorbing the Carnegie company it would not only secure a steel-making and steel-selling organization without equal at the time but would also add to itself plants which could and would give battle for world trade to Britain and Germany, did all he could to induce the financier to accept the suggestions for

the purchase of these properties. But each time Morgan hesitated.

Then Carnegie resorted to coercion. Morgan was heavily interested in the National Tube Company which was itself an amalgamation of a number of smaller tube companies. Carnegie made no tubes. His entrance into the business of manufacturing tubular products would undoubtedly have brought the National Tube Company face to face with more serious competition than it had ever encountered. And Carnegie threatened to build a tube mill. This action had two purposes. It was apparently intended to force Morgan to consider the purchase of the Carnegie properties, and it was also a retaliatory measure against the decision of the National Tube management to erect steel mills which would render the company independent of the Carnegie Steel Company for its supplies of raw material and would incidentally deprive Carnegie of a large customer. Carnegie announced his plans for the proposed tube mill publicly and bought a site for it at Conneaut, Ohio. But although Morgan knew that the steel maker was able and ready to carry out his project he gave no sign of having changed his mind.

Carnegie's next step was more important and serious. He threatened to build a railroad paralleling the Pennsylvania Railroad from Pittsburgh to the coast, a project which, if carried through, would without question have materially damaged the earning power of the great railroad system and would have been a heavier blow to the Morgan interests than the erection of a tube mill. But again Morgan paid no attention. It is extremely doubtful if Carnegie, powerful as he was, could have seriously intended to attempt such an undertaking, and therein may have lain the reason for the banker's seeming indifference. On the other hand, those who knew Carnegie declared that he would have found means to build the suggested road, even as he had in the past done other things deemed to have been impossible.

That Carnegie had no desire to enter into a pitched battle with the powerful Morgan interests seems to be fairly well established by his next act. Coercion having failed, he again resorted to peaceful tactics and fired what, possibly, was his last shot. And here it might be interjected that, while the event that directly led up to the formation of the Steel Corporation has been narrated scores, probably hundreds of times, the part that Carnegie played therein has usually been overlooked.

Among the Carnegie partners was a young man, Charles M. Schwab, president of the Carnegie Steel Company. Schwab not only represented the top notch of efficiency as a steel maker, a salesman, and an executive, but he had a veritable tongue of gold. To listen to him was to be converted to his views; he could talk the legs off the proverbial brass pot. And Carnegie saw that if the man lived who could convince Morgan to finance a purchase of the Carnegie Steel Company that man was "Charlie" Schwab. Carnegie therefore decided to bring together the financier and the president of the Carnegie Steel Company and to let loose on Morgan the flood of Schwab's eloquence.

On the night of December 12, 1900, Edward Simmons and Charles Stuart Smith, both close friends of Carnegie, gave a dinner to which Morgan was invited. And to Schwab was assigned the duty of making the speech of the evening. Ostensibly the dinner was merely a social affair with no ulterior motive, but in the light of subsequent events it may be considered certain that it was arranged at the suggestion of Carnegie, and that its purpose was the sale of his properties to Morgan.

Everything went off as planned. Schwab chose for his subject the steel company of the future. He played upon this theme as upon a harp to an attentive audience, not the least attentive of whom was the banker, and, while he never referred directly to the Carnegie company, he made it very

clear that the concern which he described in glowing terms would of necessity own and control the Carnegie plants.

Schwab foretold a future of wonderful brilliance for the steel industry. He drew a word picture of a company big enough to insure the greatest economies in the securing and distribution of its raw material, but highly specialized by departments, each and every plant confining its attention to one particular product so as to secure the highest degree of efficiency. He described such an organization as able to dominate the markets of the world and to set a pace that neither England nor Germany could follow. The ideal structure he painted was such an one as was well worthy the attention of the greatest of bankers, an industrial enterprise for which even the great Morgan might well be proud to stand sponsor.

And the youthful Carnegie president swept the financier off his feet and along with him in the flood of his oratory. The United States Steel Corporation was not actually incorporated for some months, as an undertaking so immense naturally took a great deal of time to put through, but it was by that speech that the idea of a vast steel merger, sown in Morgan's mind by Gary, was quickened into life. In that half hour the United States Steel Corporation, to all intents and purposes, became an actual fact.

CHAPTER II

THE BIRTH OF THE BIG COMPANY

A BILLION dollars!

During the past seven years the world has grown accustomed to big figures. The enormous expenditures caused by the war and the growth of the national debts of most countries, attributable to the same cause, have made the mention of a sum expressed in ten or more figures rather commonplace. But back in 1901 a billion dollars was an almost unthinkable sum and it was hardly any wonder that the financial world gasped when the plans for the new corporation, with an authorized capitalization of $1,100,000,000 in stock and $304,000,000 in bonds, were announced.

Wall Street had long been accustomed to treat millions with the dollar sign before them as mere trifles and even tens of millions were more or less commonplace. Hundreds of millions commanded respect. But a billion, a thousand million—that seemed merely a row of figures, something that could hardly be computed.

And, indeed, the mind cannot readily comprehend what a billion means. Some concrete comparison is needed to give a faint idea of the immensity of the capital of the "Steel Trust." A king's ransom? It would have ransomed a hundred kings! The fabled wealth of Ormus and of Ind, of Croesus, of Montezuma, all these fade into insignificance when compared with this gigantic aggregate of money.

If the authorized capital of the United States Steel Corporation could be turned into solid gold it would weigh 2,330 tons, or more than 5,200,000 pounds!

This gold would have a cubic content of 3,880 feet!

With it you could build a pillar six feet square and towering 108 feet in the air; or a Cleopatra's needle of virgin gold six feet square at its base and tapering to a point at a height of more than 430 feet.

A train of fifty-eight railroad cars would be required for transporting the precious metal, with two big engines, one at either end, to move the train!

For storage room the gold would require a vault 8 feet high, 20 feet wide, and 24½ feet long, and there wouldn't be an inch of spare room!

Placed at one end of a scale the gold would need 34,666 men of average weight to balance it!

If the Corporation's capital were coined into five-dollar gold pieces they would pave a road twenty-five feet wide for more than ten miles!

Stacked one on the other these coins would reach a height of more than twenty miles!

If this huge sum were converted into pure silver it would weigh 87,500 tons, with a cubic content of 268,000 feet!

This silver would form a needle six feet square at the base and piercing the skies to a height of 29,776 feet, or above the highest crest of the Himalayas!

It would take 2,200 freight cars to load it, and about fifty-five powerful locomotives to pull these cars!

This $1,404,000,000, changed into dollar bills, would measure 166,200 miles, forming a ribbon that would girdle the earth six times and leave two streamers each 8,000 miles long floating behind! A ribbon that would reach more than two thirds the distance to the moon!

These bills would cover an area of 228,317,433 square feet!

An expert bank teller working eight hours a day, Sundays and holidays included, and counting one bill a second without rest, would take more than 133 years to count them all. If he started to count on January 1, 1921, one of his descendants might count the last bill in the pile about the end of June, 2054!

If the Corporation's capital were divided evenly it would give every man, woman, and child in the United States about $14!

The interest on this sum at 6 per cent. would keep some 35,000 American families in comparative comfort without touching the capital!

From the date of the Simmons dinner to that on which the plans for the new corporation were announced was a very short period. The birth of the Corporation did not take long. Once convinced that a merger of a number of large companies making various steel products was practicable and desirable for the good of the industry and of the country—as well as for the pockets of the consolidators—Morgan and his associates lost no time in bringing it about. The dinner took place on December 12, 1900; United States Steel was formally chartered on February 25th of the year following and began business as a corporate entity on April 1, 1901.

It is likely that Schwab himself did not foresee how far reaching would be the effects of his speech. Morgan did not do things by halves. When the young steel maker caught his attention and drew a picture of a company big enough to manufacture all lines of steel and to specialize on each one, powerful enough to enter and occupy foreign markets and rich enough to expand to meet the growing demand for the metal without danger of over-stretching its resources, he painted with his words something which the banker thought it would be a proud thing to father. Morgan saw before him unlimited possibilities, not of money making alone—for this was by no means the ruling passion of his being—but of creating an organization that should leave an indelible impress for good on industrial history, a business so great that its actions could not fail to force themselves upon the attention of the world and to command imitation on the part of other industries. A business, moreover, so powerful that it would not need to resort to the dubious practices of the old days to succeed.

The great steel concern that Schwab discussed corresponded very closely to the company that Gary had long been urging Morgan to assist in creating by the expansion of the Federal Steel Co. Immediately after the dinner Morgan drew Schwab aside and the latter then went more fully into the subject of a vast steel merger than he had been able to in the confines of an after-dinner oration. Finally the financier asked Schwab if he thought Carnegie would sell, and upon receiving an affirmative reply Morgan requested the terms. A few days later Schwab reported that Carnegie's price was $303,450,000 in bonds and $188,556,160 in stock of the suggested new company. After a prolonged consultation with Gary, Robert Bacon (one of his partners), and others, Morgan accepted these terms.

As a nucleus of the proposed steel corporation, then, we have the Carnegie and the Federal companies. But Gary's plans had provided for the manufacture of a number of products made by neither of these two concerns, and Schwab, in his talk, had pictured an industrial organization that would turn out from its mills every kind of steel product, that would be able to supply its customers with everything made of the metal from a nail to a railroad car. Morgan was not a man of half measures. There was no need to make two bites of a cherry, even though it was a mighty big cherry. Having once decided to finance the formation of the new company he thought it might as well be comprehensive in its products, and so negotiations were immediately set on foot with the controlling interests in the leading concerns making wire, tubes, tin plate, etc., with a view to bringing them all into the consolidation.

The Morgan interests had financed the organization of the National Tube Co., the principal figure in which was Edmund C. Converse, so the tube company naturally was taken in. The other concerns and interests which it was proposed to unify into the new corporation were the American Steel & Wire Co., the chief figures in which were the late

John Warne Gates, Alfred Clifford, William Edenborn, and others; the four companies forming the so-called Reid-Moore group, controlled by Daniel G. Reid and William H. Moore —namely the National Steel Co., American Tin Plate Co., American Sheet Steel Co., and American Steel Hoop Co.

By the early part of February, 1901, the negotiations were concluded and the plans for the organization of the United States Steel Corporation were announced. They provided for the amalgamation of these eight companies, the smallest of which had a capitalization of $33,000,000 and the largest of more than $300,000,000. Before the plans were finally put through, however, two more units were added to the list, the Lake Superior Consolidated Iron Mines, dominated by the Rockefeller interests, and the American Bridge Co., at the head of which was Percival Roberts, Jr. The absorption of the Lake Superior Consolidated Co., with its vast ore holdings and steamship fleet, was deemed necessary to ensure the Steel Corporation an adequate ore reserve. The American Bridge Co., which secured most of its supplies of steel from the Carnegie company, seemed to fit naturally into the plans for the consolidation.

Thus there were ten large companies taken in, merged to form the United States Steel Corporation. They had an aggregate capital of $867,550,394, as follows:

COMPANY	COMMON STOCK	PREFERRED STOCK
American Bridge Co.	$30,527,800	$30,527,800
American Sheet Steel Co.	24,500,000	24,500,000
American Steel Hoop Co.	19,000,000	14,000,000
American Steel & Wire Co.	50,000,000	40,000,000
American Tin Plate Co.	28,000,000	18,325,000
Carnegie Steel Co.	160,000,000	160,000,000*
Federal Steel Co.	46,484,300	53,260,900
Lake Superior Consolidated Iron Mines	29,424,594	.....
National Steel Co.	32,000,000	27,000,000
National Tube Co.	40,000,000	40,000,000
Total.	$459,936,694	$407,613,700

*Bonds. All other figures in this column represent preferred stock.

The American Bridge Co., as its name implies, was a fabricator of bridge material and structural steel generally. It was not a steel company in the strict sense. It obtained a large proportion of its supplies of steel from the Carnegie company and fabricated this material. It had a capacity of approximately 600,000 tons yearly. The company was incorporated in May, 1900, as a consolidation of a number of smaller concerns and had a surplus of $4,030,331. Holders of its preferred stock received $110 in preferred stock of the new corporation for each $100 of their holdings, while the common stockholders received $105 in U. S. Steel common for each $100 of their holdings.

Four companies, as has been stated, formed the "Reid-Moore" group. The American Tin Plate Co. was chartered in December, 1898. Like all the concerns forming this group it was considerably over-capitalized. Nevertheless, its earnings in the first year of its existence were approximately $3,600,000 or 20 per cent. on its preferred capital, and in 1900 they exceeded $5,750,000, or about 32 per cent. on the preferred capital. At its formation it acquired thirty-nine different plants, embracing 279 mills, manufacturing tin and terne plates. Its preferred stockholders received $125 in U. S. Steel preferred stock for each $100 of their holdings and its common stockholders $120 in preferred and $125 in common stock of the new corporation for each $100 of their holdings.

The National Steel Co., another of the Reid-Moore concerns, was the maker of raw material for the other three members of the group. Its production was largely confined to semi-finished products and it had a capacity of about 1,700,000 tons of steel a year. It had some ore holdings in the Mesaba Range as well as a twenty-year contract for a one-sixth interest in the ore production of the Oliver Iron Mining Co. The company was chartered early in 1899 and in the first year of its existence earned approximately

$8,750,000, or more than 32 per cent. on its preferred stock. Of this amount, however, $3,617,000 was written off for depreciation. At the time it was merged into the Steel Corporation it had surplus and undivided profits of $6,910,995. Holders of both its common and preferred stock for each $100 of their holdings got $125 in the corresponding stock of the new corporation.

The American Steel Hoop Co., third of the group, was formed a month or two later than the National Steel Co. It was a consolidation of nine concerns manufacturing chiefly bars, hoops, bands, cotton ties, and skelp, and had an annual capacity of about 700,000 tons. Its earnings were not as large as those of the others of the group, its first nine months' operations yielding a return at the annual rate of slightly under 7 per cent. on the preferred capitalization. Its accumulated surplus on April 1, 1901, was $1,660,311. The two classes of its stock were exchanged at par for the same classes of U. S. Steel stock.

Last of the Reid-Moore companies to be organized was the American Sheet Steel Co., chartered in February, 1900. This company acquired 164 sheet mills, nineteen puddling furnaces, and a number of open-hearth furnaces and bar mills. It had a capacity of about half a million tons. Its earnings, from the time it began business to April 1, 1901, amounted to $1,676,480 and its surplus on the latter date was $705,757. Its stock was exchanged for Steel Corporation securities on the same basis as those of the Steel Hoop Company.

The National Tube Co., organized in June, 1899, was a merger of thirteen smaller concerns having an aggregate capacity of about 850,000 tons of steel-wrought tubing. Its principal plants were located in the Pittsburgh district. In the year 1900 the company reported net profits after depreciation of more than $14,600,000, or about 35 per cent. on its preferred capital stock. National Tube preferred stock-

holders exchanged their holdings at the rate of $100 for $125 of U. S. Steel preferred, while the junior stockholders received $8.80 in preferred and $125 in common stock of the corporation for each $100 they held.

The Federal Steel Co., second only in size and importance to the Carnegie Steel Co., was chartered late in 1898, as a merger of the Illinois Steel Co., Minnesota Iron Co., Minnesota Steamship Company, Mount Pleasant Coke Company, Lorain Steel Co., Elgin, Joliet & Eastern Railway Co., and the Johnson Co. of Pennsylvania. The steel companies it controlled brought to it some of the best-equipped steel mills, manufacturing various products, in the country, as well as a number of ore vessels and the principal ownership of the Duluth & Iron Range R. R. Its earnings in 1899 were approximately $9,100,000, or about 17 per cent. of its preferred stock, and in 1900, $11,722,000, or about 22 per cent. Federal Steel preferred stockholders received new preferred stock at the rate of $110 for each $100, and the common stock was exchanged at the rate of $100 of Federal common for $4.00 of preferred and $107.50 of the common stock of the U. S. Steel Corporation.

The Lake Superior Iron Mines, dominated by the Standard Oil interests, was formed in 1893. It was merely an ore company and had ore reserves, owned or leased, estimated at nearly 400,000,000 tons. The company also owned the Duluth, Missabe & Northern Railroad, and it was affiliated with the Bessemer Steamship Co., afterward purchased by the Steel Corporation. The earnings of the Lake Superior company were enormous, having been nearly 58 per cent. on its capital in 1900. For each $100 of its stock—there was only one class—$135 each of preferred and common stock of the U. S. Steel Corporation were exchanged.

The American Steel & Wire Co., of New Jersey, was a consolidation effected in January, 1899, of the majority of the country's wire mills. It had a rod mill capacity of more

than 1,100,000 tons and a wire nail capacity of more than 10,000,000 kegs, or more than 500,000 tons. It also owned extensive ore and coking coal properties. In the first year of its operation the wire company earned nearly $19.00 a share on its common stock after an allowance of $1,200,000 for depreciation, and in 1900 its earnings applicable to the common stock were $4,202,129, or nearly 8½ per cent. on the issue. Its preferred stock was exchanged on a basis of $117.50 U. S. Steel preferred for each $100, and its common stock on the basis of $102.50 of Steel common for each $100 of Steel & Wire.

We come now to the largest and most important of the ten companies originally merged into the monster Steel Corporation—the Carnegie Steel Co., the great organization ruled by the Monarch of Steel and turning out from its furnaces and mills practically one fifth of all the steel made in the United States; and, incidentally, pouring undreamed-of wealth into the pockets of Carnegie and his associates. A company that realized profits in 1899 of nearly $24,000,000 and in 1900 of approximately $40,000,000!

The Carnegie Steel Co. was a merger of the Carnegie and Frick interests. By its absorption the new corporation secured possession of the greatest steel organization of its time, as well as of the important coke holdings of the H. C. Frick Coke Co.—owning about 40,000 acres of coking coal lands, 11,000 coke ovens, and other property—a controlling interest in the Oliver Mining Co. with its large ore possessions, and the controlling interest in the Pittsburgh, Bessemer & Lake Erie Railroad, not to mention a number of other concerns and interests of less importance.

Unlike most of the other merged companies, the Carnegie Steel Co. had all its steel-making plants concentrated in the Pittsburgh district. It was in this locality that Carnegie had built up his great business machine and his fortune. He had never attempted to build elsewhere, with the

exception of his threat to erect a tube plant at Conneaut. Carnegie believed in the future of Pittsburgh. And he himself did more than any one else to assure that future. Carnegie it was who had made Pittsburgh the steel centre of the universe. And his plants there, at the time they were taken over by the Corporation, had an annual capacity of some 3,500,000 tons of steel ingots and more than 3,000,000 tons of finished products.

When the Carnegie company was reorganized in March, 1900—at which time the merger with the Frick company took place—its capital was placed at $160,000,000 in stock and a like amount in bonds. All the stock and all but $50,000 of the bonds were taken over by the organizers of the Steel Corporation and for these, as has been seen, a total of $492,006,160 was paid, as follows: for $159,450,000 Carnegie bonds an equal amount of bonds of the new company was exchanged; another $144,000,000 in new bonds was employed to take up $96,000,000 of the Carnegie stock while $98,277,120 Steel preferred and $90,279,040 Steel common paid for the remaining $64,000,000 Carnegie Steel stock.

In order to provide for the exchange of new stocks and bonds for the securities of the constituent companies the new organization, which it had been finally decided to name the United States Steel Corporation, was given an authorized capitalization of $550,000,000 each in common and preferred stocks and $304,000,000 in bonds, a total of $1,404,000,000. To ensure sufficient working capital at the start a sum of $25,000,000 was put up in cash by the syndicate, headed by the Morgan interests, which had financed the transaction. This syndicate also turned over to the corporation $174,000 in securities of the merged companies which had been acquired by means other than exchange, and expended some $3,000,000 as syndicate expenses. For the cash, stock, and its services the syndicate received 648,987 shares of preferred stock and 648,988 shares of common stock.

Practically all the stockholders of the old companies, satisfied that with the Morgan backing the new company its success was fairly well assured, took advantage of the exchange offer, with the result that at the end of the first nine months of its existence less than 1 per cent. of the old securities were still held in the hands of the public and of the Corporation's capital as authorized $1,319,229,000 had been issued. To-day only about three hundredths of one per cent. of the stock of the ten companies is still held outside the Steel Corporation.

The steel-producing equipment controlled by this vast aggregation of capital comprised 149 steel works of various kinds, having an annual capacity of 9,400,000 tons of crude and about 7,700,000 tons of finished steel; 78 blast furnaces with a pig iron capacity of 7,400,000 tons; more than 500,000 acres of coking coal lands; more than 1,000 miles of railroad and a fleet of 112 vessels engaged in traffic on the Great Lakes, not to mention large areas of ore-bearing property with uncounted millions of tons of developed and undeveloped ore, as well as docks, natural gas, and limestone properties, etc.

Just as the Corporation's capital, wealth, and resources had never before been approached by any industrial organization so its board of directors surpassed in aggregate wealth that of any other company. The list of the men who guided the Corporation's destinies included J. P. Morgan, John D. Rockefeller, and a host of others whose gigantic fortunes were exceeded only by those of the two kings of finance named. The others were: Elbert H. Gary, H. H. Rogers, Charles M. Schwab, Robert Bacon, Edmund C. Converse, Francis H. Peabody, Percival Roberts, Jr., Charles Steele, William H. Moore, Norman B. Ream, Peter A. B. Widener, James H. Reed, Henry Clay Frick, William Edenborn, Marshall Field, Daniel G. Reid, John D. Rockefeller, Jr., Alfred Clifford, Clement A. Griscom, William E. Dodge, Nathaniel Thayer, and Abram S. Hewitt.

Their fortunes, if it were possible to add them together, would amount to a sum greater even than the huge capital of the "Steel Trust."

Of the original directorate of the Corporation only seven still survive and only two are still directors. These are Gary and Roberts.

Charles M. Schwab was chosen president of the Corporation, Arthur F. Luke treasurer, and Richard Trimble secretary. Elbert H. Gary became chairman of the Executive Committee, and with him were Charles Steele, Percival Roberts, and Edmund C. Converse. A Finance Committee was also appointed with Robert Bacon at its head, and H. H. Rogers, Norman B. Ream, Elbert H. Gary, and P. A. B. Widener as the other members. The salaries of the president and of the chairman of the Executive Committee were placed at $100,000 each.

It is hardly to be wondered at that many prophets declared the new company was foredoomed to failure. Its very size, they claimed, would render it unwieldy, and it would collapse of its own weight. And there was a matter of something like half a billion dollars of common stock represented by no tangible assets, pure water it was claimed. It was questioned if dividends could ever be paid on this.

How could Morgan ever have been induced to back so great and so impracticable an enterprise? Many asked this question, and found no satisfactory reply. Some thought the banker had over-reached himself at last, but the majority were convinced that the organization of the Steel Corporation was merely a prodigious stock-jobbing scheme to put money into the pockets of Morgan and his associates—and that, as such, it would prove eminently successful. Few there were who had faith in the "Steel Trust" as a practical business proposition.

But incredible as it may have seemed to those accustomed to the vagaries of high finance as it was often practised in

1901, the promoters of the United States Steel Corporation did not regard it as a mere venture in financial legerdemain. They had the greatest faith in it as a straightforward business enterprise. They believed in its future. Judge Gary, who took an active part in the organization, has always insisted that it would be successful and the enterprise justified. And the reader of the history of the big company must judge for himself whether it has justified its organization, not only from an economic, but more particularly from a sociological standpoint.

Morgan, it has been said, considered the financing of the Steel Corporation the crowning achievement of his career. Was he mistaken? Or did he, in making possible this giant Corporation, erect himself a monument more lasting than brass?

It has been admitted that a large part of the Steel Corporation's original capital was water. Just how much will never be decided. Herbert Knox Smith, Commissioner of Corporations under President Roosevelt, estimated that substantially half of the Corporation's total issue of securities was not based on any tangible property assets. Other critics have gone further, while some have placed the amount of over-capitalization at a lower figure. Mr. Smith's figures, so far as they go, are probably approximately correct, except that they made little or no allowance for the enormous value of the Corporation's ore holdings.

But does the cost of tangible assets indicate actual value? Does the cost of erecting a factory or a business indicate the value of that business? Manhattan Island was originally purchased for twenty-four dollars. A business that is losing money is seldom worth the investment put into it, and conversely a money-making concern must be valued on its earning power. Many of the companies merged into the United States Steel Corporation were immensely profitable, and even though they themselves may

have been over-capitalized, their value to the new corporation and to their stockholders was greater than their capitalization.

The actual plant cost of the Carnegie Steel Co., to take one instance, had been placed at about $75,000,000. That is, these plants in 1901 could have been duplicated for that sum. But the organizers of the Steel Corporation bought not only the Carnegie plants; they purchased an organization that was at the same time the most efficient steel-making and steel-selling machine in the world, an organization that the best-qualified witnesses have declared was worth anything from $250,000,000 up. An organization, moreover, that had earned $40,000,000 in a single year. And what was true in the case of the Carnegie company was, in part at least, applicable to most of the other concerns which went to make the United States Steel Corporation.

Further, in organizing the big company, there were many conflicting interests to be brought into harmony. It was necessary to secure control of various enterprises in order to obtain the rounded-out organization aimed at by Gary, Schwab, and the others. And each seller, naturally, was holding out for all he thought it possible to get. It was, therefore, a matter of bargaining and without doubt the result was that in more than one case the final price was above the value of the thing purchased.

In this connection it is related that shortly after the corporation had been formed the old Iron Master and Morgan met on a steamship on their way to Europe, and Carnegie in the course of conversation intimated that he considered he had driven a shrewd bargain with the corporation interests. To which the banker is said to have replied: "I would have paid another hundred million if you had asked it." The story, the accuracy of which cannot be vouched for, concludes that Carnegie never forgave himself for his too-modest demands.

The general consensus of opinion is that the Corporation's bonds and preferred stock were both amply protected by assets at the time of its organization but that the junior stock had nothing behind it but "blue sky." Admitting the justice of this claim, which has never been denied and probably cannot be, this state of things no longer exists. Whatever water once permeated the capital of the Steel Corporation has been squeezed out. Year by year the directors have voted large sums out of earnings for the erection of new plants, the extension of old ones, until approximately $900,000,000 has been expended in this manner, this providing adequate—more than adequate—protection for the common stock and putting the Corporation beyond reach of criticism to-day on the charge of over-capitalization.

Not long ago Judge Gary, testifying at Washington before a Senate committee, asserted that the Corporation's properties then—October, 1919—were actually worth $2,200,000,000 in round figures, or well over $700,000,000 more than its entire funded and stock capital. He asserted they could not be replaced for that sum. And other steel men declare his statement is justified.

When the Corporation began its existence the plants of its subsidiary companies, as we have seen, had a capacity of more than 9,000,000 tons of steel ingots, while its furnace capacity was only 7,740,000 tons. It was compelled to purchase a large proportion of its pig iron requirements in the open market. To-day its plants are capable, if worked at full, of producing 22,350,000 tons of steel ingots and its pig iron capacity is 18,400,000 tons. Practically all this gain in production has been attained by "plowing" profits back into additions and improvements with the object of putting actual plant value behind every dollar of stock issued.

This consummation was arrived at about seven years ago and it was then made known that the policy of using profits for building new mills and furnaces or acquiring additional

property had been abandoned and that future expansion would be financed by the issuance of bonds, which would permit stockholders to share more liberally in profits than they had in previous years.

But although the Corporation, since the new policy was announced, has put more than $400,000,000 into new plant, practically all expenditures for extensions have been from earnings. The war, bringing about a boom in steel, brought to the Corporation such large profits that it was possible to use surplus earnings for extensions and yet pay big dividends to stockholders, making new financing both unnecessary and unwise. At present the Corporation is so strongly entrenched financially that the possibility of borrowing for plant additions becoming necessary has been put into the distant future, possibly eliminated forever.

We have seen how the Corporation was formed as a consolidation of ten of the most important steel-producing concerns in the United States, with a combined capacity of nearly two thirds the country's possible output. So great an operation cannot be considered merely as a matter of finance. The biggest of trusts must of necessity contain enormous potentialities affecting the general welfare of industry and of the State. Its organizers and managers, in consequence, cannot resent fair-minded investigation into the use it makes of its powers. Has the Steel Corporation's existence been prejudicial to the interests of its competitors, its customers, its employees, or the general public? These questions will be treated in more or less detail in the course of this history, but it might not be out of place to point out a few salient facts on this subject at this point.

Since the Corporation began its existence a number of new steel companies have sprung into being, grown and expanded, while the older so-called independents have greatly increased their output. Although the Corporation has added about 13,000,000 tons to its steel-making capacity its competitors

have added a still larger amount with the result that the big company now controls less than half the steel production of the United States.*

Enjoying the confidence of a number of steel manufacturers competing with the Steel Corporation the writer has been unable after patient investigation to find any evidence of its having at any time used its immense wealth to undersell a competitor, large or small, with the purpose of driving it out of business, while he has discovered more than one instance where it has actually assisted competitors. A company, especially one whose very size exposes it to envy and attack, could not fail to earn the enmity of its competitors if its methods were not at all times fair and above suspicion. The "Steel Trust's" competitors have time and again, privately and publicly and under oath, declared that they have no cause of complaint against it.

That this attitude on the part of the independent steel men was inspired solely by the fear that criticism levelled against the big corporation would involve a trade war directed against the critic and his consequent ruin has been suggested in irresponsible quarters. This is a poor compliment to the heads of some of the country's leading industrial organizations. No one who knows Charles M. Schwab, John A. Topping, James A. Campbell, Willis King, E. A. S. Clarke, and other big steel "independents" would regard the charge as worthy of consideration.

How has the customer, the steel consumer, fared? The Corporation has always been slow to advance prices and equally slow to lower them. It has usually endeavored to prevent prices from reaching an abnormally high level in "boom" times, when overwhelming demand had placed the steel seller in control of the market, by setting a maximum quotation at a fair level permitting any manufacturer a fair profit, and has thus protected the consumer whose urgent

*See Appendix, page 308.

need of the metal at a particular time made him a prey to profiteering. Such a course was followed in 1914 and in 1917, both periods of ascending prices. And it is being pursued again at the time this is written. To-day the steel maker who has material for immediate or early delivery can get enormous premiums, abnormally high prices, for his output. But the Corporation is selling at the levels agreed on in 1919 with the Industrial Board appointed at that time by the President and refuses to advance its price although the Government itself abrogated the arrangement. And whether for quick or deferred delivery it charges one price. It refuses to give delivery preferment for any consideration, saying in effect "first come, first served."

And by endeavoring to prevent wild price reductions in periods of depression it has afforded protection to consumers who made their purchases at the top of the market, or near it, and who would have suffered heavy losses from a break in the steel market not only from the reduction in the value of their inventories but because their competitors might be able to buy steel at much lower prices and undersell them.

Has the public, which always pays the bill in the long run and whose interest is paramount, been injured? In the thirteen years from the Corporation's organization to the beginning of the European war the tendency of steel prices has been downward, not only as compared with those of other commodities, which ascended, but on a dollar-and-cents basis. This tendency of prices will be discussed more fully in a later chapter. The war, it is true, brought about a decided advance in steel prices, but in comparison with other commodities they still show favorably. And there is no question that quality has improved.

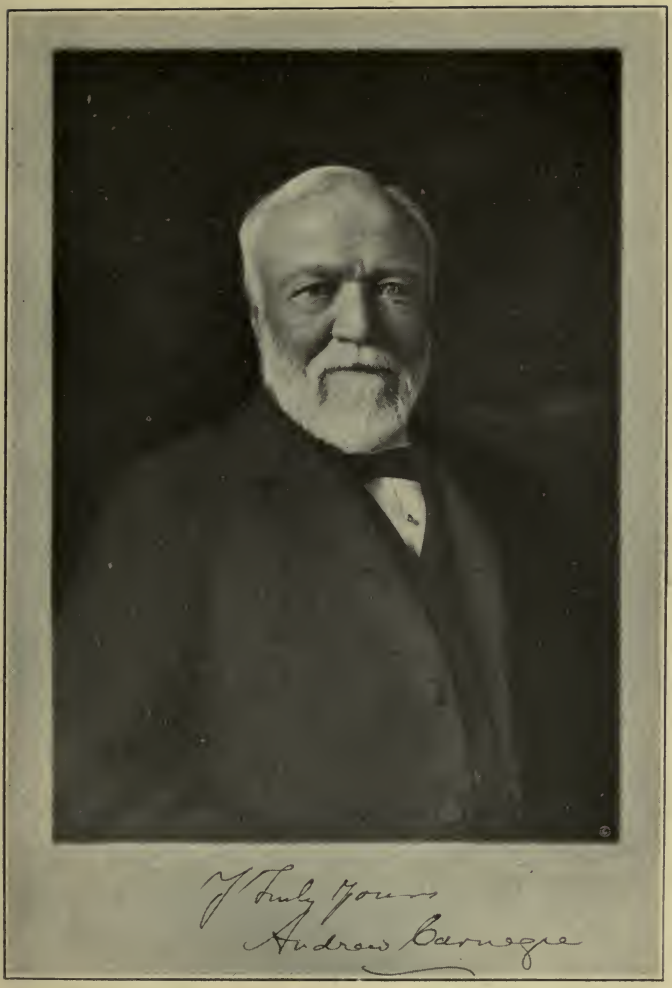
No better illustration of the Corporation's price policy can be found than that afforded by a comparison of the weighted average of actual prices received by it for the past eighteen years on ten principal products with Dun's index number of

all commodity prices indicating the fluctuations in living cost for the same period. In this comparison 1903 is taken as the base because, in that year, Dun's index number was 99.456, or as nearly as possible 100.

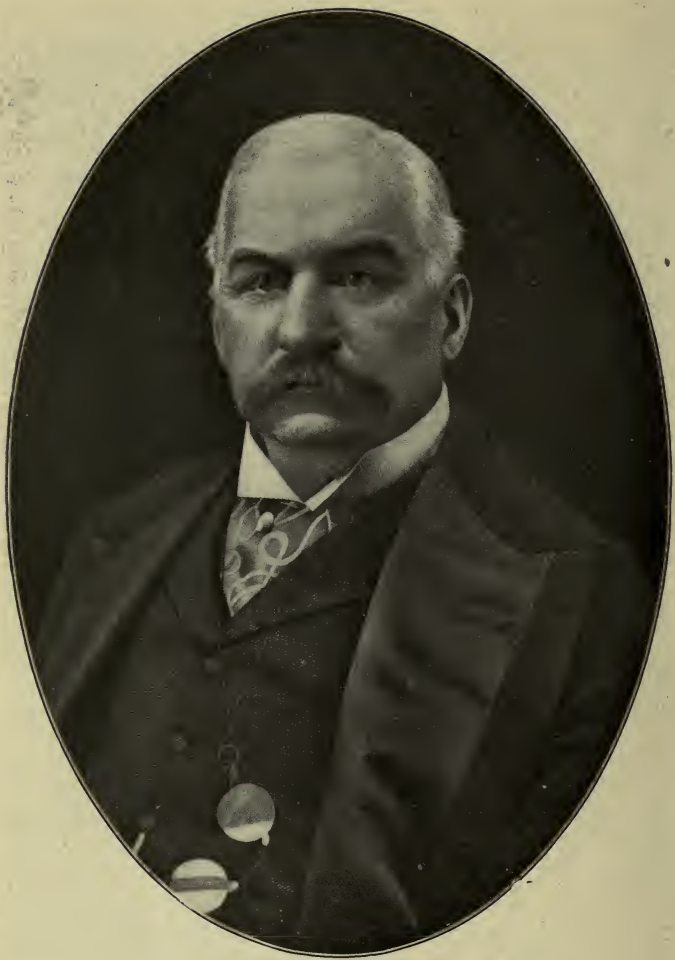
YEAR	DUN'S INDEX NUMBER	CORPORATION'S PRICE RECEIVED	INDEX NO. BASED ON CORP. PRICE
1903	99.46	$37.56	100.00
1904	97.19	33.15	88.3
1905	98.31	32.89	87.6
1906	105.22	34.54	91.8
1907	113.66	36.59	97.3
1908	108.17	36.19	96.3
1909	119.02	32.52	86.5
1910	119.17	34.10	90.7
1911	118.13	31.88	84.8
1912	122.28	30.03	80.0
1913	116.32	33.25	88.5
1914	119.71	30.60	81.4
1915	124.96	30.67	81.6
1916	145.14	41.31	109.9
1917	211.95	60.08	60.0
1918	232.57	68.86	83.5
1919	233.71	62.66	167.0
1920	260.41	(nine mos.) 62.67	167.0

The ten classes of products used in arriving at the weighted average are: Heavy rails; blooms, billets, slabs and sheet and tin bars; plates; heavy structural shapes; merchant bars; bright coarse wire; wire nails; black sheets; merchant pipe and oil country goods; black plate.

Nor has the steel worker been lost sight of. It is admitted by all familiar with the subject that the Steel Corporation has been responsible for the steady and decided advance in wages in the industry that has been witnessed in the past nineteen years. Wages have been increased voluntarily and without demand from the men whenever trade conditions made increases possible. At the same time the Corporation has steadily set its face against reducing wages in times of stress. And what is more important it has spent immense



Andrew Carnegie



J. Pierpont Morgan

sums of money in sanitation, education, and other ways of bettering the wage earner's lot, has helped him to save and invest his money by offering special inducements for so doing, and has set an example in industry generally that has done more for the cause of common labor than has been accomplished by the labor unions themselves.

It may seem absurd to accuse the management of the Steel Corporation of socialistic leanings. But among the 160,000 stockholders of the big enterprise more than one third are men who work in its furnaces, mines, mills, and offices, and these have become stockholders under the plan that permits employees to acquire stock on the instalment plan and offers a premium as an inducement to hold it. Does the history of the industrial world contain another so striking instance of a step toward ownership of the product of labor by labor itself, toward the highest and best socialism?

CHAPTER III

EARLY HISTORY AND GROWTH—1901 TO 1907

IT WAS perhaps natural that the early years of the big new corporation were not entirely without their troubles. The work of bringing together and making into one harmonious whole a number of different companies, with the smoothing out of mutual jealousies and dispelling of distrust, was a far greater task than the actual financial organization. And it was only with the passage of years that this was successfully accomplished.

It will be remembered that Schwab, in his speech at the Simmons dinner, had pointed to the advantages of integration which would be possible in a big steel merger, and the fact that a concern like the Steel Corporation, and such a concern alone, could successfully invade foreign markets and develop, in competition with European manufacturers, a permanent outlet for American steel. This was the same thought held by Gary when he had previously urged Morgan to finance a big steel combine. Briefly, these were the principal reasons for the Corporation's existence; and these were the objects which its founders immediately set themselves to attain.

The early history of the Steel Corporation, therefore, will naturally be found to have concerned itself largely with achieving these ends. It is to a great extent the narrative of the various steps taken to coördinate the more or less divergent units brought together in the new Colossus of Steel, of the work that had to be accomplished, the difficulties that had to be overcome, before it could fulfil its *raison d'être* and win the place it now occupies as the most important business enterprise in the world.

Many dangers faced the new-born Corporation. Not the least of these, although it was not realized at the time, was that, glorying in its giant's strength, it might use that strength mercilessly, like a giant. Had it chosen so to do there is little doubt that it would have reaped some immediate financial benefits, but events of later years proved conclusively that it would have but laid the seeds for its own eventual destruction. That the Corporation chose a different policy, and up to that time one almost unknown in business, was due to the insistence of Judge Gary.

And here it might be said that he did not have by any means an easy time in convincing all of his co-directors that the policies he advised should be adopted. For years he had a constant struggle, but gradually he won over all of his opponents to this point of view.

Another of the dangers that beset the path of the new Corporation lay in the fact that it was not an operating company with a number of plants controlled by one central management, but a holding company controlling by stock ownership a number of industrial units which had previously been owned by utterly conflicting interests and each of which continued necessarily to operate under a separate management.

The natural corollary of this state of affairs was that the management of each constituent, or subsidiary company, troubled itself solely about the success of its own particular unit and took little interest, if any, in the affairs of the other subsidiaries or the success of the Corporation as a whole. And had this condition continued the attainment of the ends for which the Corporation was organized would have been rendered impossible, its very existence made vain.

To illustrate: the Carnegie Steel Co. and the Illinois Steel Co., a subsidiary of the Federal Steel Co., had widely separated plants, and, because of the important item of freight rates, sold for the most part in different territories. But the two companies competed in a middle ground and each had

succeeded in encroaching on the other's natural territory, in some instances had attached to itself certain customers therein. To retain these customers each company was compelled to sell in a locality adjacent to the other's mill at the same price as its competitor was willing to offer. The Carnegie company, for instance, might have achieved the custom of a railroad whose Eastern terminus was Chicago. To supply the orders of this road it would have to pay freight tariffs from its mills near Pittsburgh and deliver the goods to the road at Chicago at the same quotation the Illinois company was naming for deliveries from its mills in the very suburbs of Chicago. It is extremely doubtful if such a situation was really advantageous to either company in the long run. It is certain that its continuance would have been distinctly disadvantageous to the Corporation that owned the stock of both concerns; it simply meant that the Corporation would have to pay freight for carrying steel hundreds of miles when it was able to deliver it from a mill practically at the customer's door.

The officers of each company were naturally unwilling to hand over custom they had built up by years of effort to a concern long regarded as a competitor. Even from the standpoint of the then-existing conditions each must have felt that it was his job to make a good showing for the company he managed; he had no concern elsewhere. But, for the good of the whole organization, it was absolutely necessary that these officers should be brought to realize that they were working first of all for the United States Steel Corporation, that inter-company jealousies must be buried for the common good and the interests of the party made subservient to the welfare of the state. And the way to do this was to make the interests of the Corporation, the controlled company, and the individual worker identical.

Andrew Carnegie had built up the greatest steel company of its time by appealing to the loyalty of his men through self-interest. Like Napoleon's soldiers, each man under him

carried a potential marshal's baton in his knapsack. The Napoleon of Steel held dangling before the eyes of his subordinates the hope of a partnership in the great Carnegie company as a reward for meritorious service, and most of his later partners won their way upward from the ranks. And the scheme worked out by the Corporation's management to bring about the desired harmony, to assure loyalty to the United States Steel Corporation first and last, was modelled to some extent on Carnegie's method. It became known as the Stock Subscription and Profit-Sharing Plan.

Before going into the details of the plan an example of its effects may be illuminating. Journeying over the Corporation's plants and mines the author was impressed by this very spirit of loyalty and coöperation on the part of officers and workers alike, and commented on it to William A. McGonagle, president of the Duluth, Missabe & Northern Railroad. And Mr. McGonagle related the following instance of this spirit of coöperation:

> When we were planning the big ore concentrator at Coleraine the engineers and other officers of the various companies concerned were called together in consultation and certain differences of opinion arose regarding the plans, each of the men present urging changes which he thought would be of benefit to the company he represented. While the discussion was at its height somebody rose and said, "Gentlemen, it is not a question of what is best for the Duluth, Missabe & Northern, the Oliver Iron Mining Co., or any other company; the whole question is, what is best for the interests of the United States Steel Corporation!" That settled it. All differences were smoothed out and a harmonious plan quickly agreed on.

This result was due to the plan referred to which was devised to give each employee the stimulus of personal ownership, an incentive not confined, as it had been formerly, to a few individuals, but distributed throughout the organization.

The plan, as finally worked out and put into operation, was designed to accomplish three main objects: first, to interest employees in the Steel Corporation as a whole and not merely in the operations of the subsidiary for which they worked;

second, to give them an incentive to do everything possible to reduce expenses and correspondingly increase profits; third, to offer them an inducement to stay with the Corporation and identify themselves with it.

It is with the first, or stock subscription part of the plan, that the public is most familiar. The benefits of this are extended to all employees of the Corporation who desire to take advantage of it. It is simply an effort to increase their interest in the Corporation and at the same time encourage thrift by enabling them to purchase stock at an attractive price and to pay for it in small instalments, with the additional incentive of a bonus for holding for a certain time the stock purchased. Usually the offering price has been a point or two below the market, but in 1920, for the first time, the subscription price was set slightly above it.

In effect the stock subscription plan makes for a capital-labor partnership. It benefits both the worker and the employing company. It, in a small way, makes the worker a capitalist himself and enables him to see something of both sides of the case in capital and labor disputes. This plan, and others more or less similar adopted by other companies, have done more to bring into accord the relations between capital and labor than thousands of sermons and theses by theoretical reformers. It is a hard-headed, practical solution of the great problem.

The late George W. Perkins has generally been credited with the conception and perfection of this plan. And unquestionably he had much to do with it, and took a leading part in its consummation. He always took a keen interest in anything that tended to better the conditions surrounding the worker or to reduce the friction that, unfortunately, exists between capital and labor. But, as a matter of fact, the plan was largely Judge Gary's, as was brought out in the testimony in the Steel dissolution suit, and—to quote Perkins himself:

"Two men have been my especial inspiration—one of

them Judge Gary, the actual operating developer of corporation progressiveness as we have it at its best; but he has a positive passion for doing good things and big things behind the screen of somebody else's personality; and credit that belongs to him—tremendous credit—lands elsewhere. Over and over he has made me protest against his insistence that I or another should accept applause for accomplishment directly belonging to himself; for instance, in employees pensions and profit sharing."

In its application the stock subscription plan has been an unqualified success. Particularly in recent years employees of all classes from common labor to executives have shown eagerness to avail themselves of its terms to acquire a personal financial interest in the big Corporation. Subscriptions for years have far exceeded the amounts of stock offered and all oversubscriptions have been honored. The figures of the annual subscriptions to stock under the plan speak for themselves:

YEAR	PREFERRED SHARES TAKEN	PRICE	COMMON SHARES TAKEN	PRICE	NO. OF EMPLOYEES SUBSCRIBING
1921	———	——	255,308	$81.00	81,710
1920	———	——	161,298	106.00	63,324
1919	———	——	155,098	92.00	59,792
1918	———	——	93,488	92.00	41,991
1917	———	——	66,519	107.00	38,326
1916	———	——	49,538	85.00	24,631
1915		No offering			
1914	42,687	105.00	47,346	57.00	45,928
1913	34,418	109.00	25,583	66.00	35,687
1912	30,613	110.00	30,528	65.00	36,575
1911	19,324	114.00	29,072	70.00	26,305
1910	24,679	124.00	———	——	17,381
1909	17,953	110.00	15,380	50.00	19,116
1908	30,398	87.50	———	——	24,527
1907	27,150	102.00	———	——	14,163
1906	24,001	100.00	———	——	12,192
1905	18,180	87.50	———	——	8,494
1904	31,644	55.00	———	——	9,912
1903	47,551	82.50	———	——	26,399

NOTE: Above figures differ slightly from those given in annual reports, a few employees having failed each year to go through with their subscriptions.

Besides being given as much as three years to pay for stock purchased employees who hold their stock receive an annual bonus for five years. At first, when only preferred stock was issued, the bonus was $5.00 a year. Later, when the common stock began to have a real investment value, this, too, was offered with an annual bonus of $3.50. But in recent years the investment value of the common stock still further increasing, and it having become impossible to purchase any considerable amount of preferred stock at a reasonable price, only the junior security has been offered employees and the bonus on the common has been raised to $5.00 a year.

Latest figures show that there are now more than 66,000 employees and their families interested in the plan, that is, that number are either paying for stock or, having paid, are drawing their annual bonuses. As it is likely that there are still more employees not now on these lists but owning stock bought more than five years ago it seems fairly safe to assume that the number of employees who, as stockholders, have an interest as part owners in the great organization that they work for is not less than 70,000.

And in this number are included employees from all ranks, including workmen, so-called office boys, elevator operators, and executives. The plan was designed to be, and is, catholic in its scope.

Naturally, the stock subscription plan has not been regarded with favor by those whose interests lie in fomenting dissent between capital and labor and the plan has been attacked in many ways. One of these is the charge that it is a money-making scheme under which the Corporation purchases its own stock cheap and sells to the workers at a profit. As a matter of fact, the operation of the plan is a continual source of expense to the Corporation which has so far spent on it an aggregate of $9,160,000. It has, however,

profited from the plan in one way—increased loyalty, efficiency, and coöperation.

Only "the men who occupy official or semi-official positions and who are engaged in directing and managing the affairs of the Corporation and of its several subsidiary companies" were concerned in the profit-sharing portion of the plan, generally designated as special compensation. This was more or less an adaptation of Carnegie's method of rewarding his assistants for good service, with the difference that it held out no allure of return for effort selfishly directed, but only that done for the good of the entire organization. It was a yearly distribution to the men above described of a small percentage of the profits above $80,000,000, part of the bonus being paid in cash and part in stock of the Corporation. At the time of the promulgation of the plan it was made plain that there would be no increases in salaries of officials. All additions to salary would come through these bonuses, and in basing them on the profits of the Corporation and not of the separate subsidiary companies a powerful motive for loyal and harmonious effort for the good of the Corporation was created.

Why did not the workmen generally share in this bonus distribution? It would have been impossible to make anything like an equitable distribution among the employees of every class, especially in view of the fluctuating character of a large mass of the labor employed in the industry. But the worker with his hands did share in profits in a more definite way. His wage was increased time and again and he received the benefits of these increases whether profits were large or small. This was more satisfactory to him. And in the stock subscription part of the plan, with its attached automatic bonus, he had an equal opportunity with the men above him in authority.

But long before the Stock Subscription-Profit-Sharing Plan was perfected steps had been taken to coördinate the work of

the Corporation and to bring about economies. First of these was the institution of a system of comparative cost sheets immediately after the Corporation began its existence.

The earning of profits for stockholders was the first object of the big company, as it is in every business, and its formation had been undertaken largely with the idea that the magnitude of its operations would make greater economies possible, with a gain rather than a sacrifice of efficiency and quality.

In the old steel days the calculation of costs had been more or less haphazard, at least in most instances. Too often the entire operating expense of steel making, from mining to the turning out of the finished product, had been "lumped" at the end of the year, and there was no means of arriving at the knowledge of just where profits, if there were any, were made, while if they were non-existent or unsatisfactory it was equally out of the question to fix the blame on any one department. Moreover, such secrets of economy as were discovered by those in charge of a furnace or mill were rigidly guarded as giving an advantage over competitors; all of which did not contribute to a general high average of efficiency and economy.

The Corporation's management first set to work to ascertain the exact cost of running each and every mine, furnace, or other department, the costs being tabulated for the information of the whole organization. The cost tables were made up in the most minute detail, the blast furnace cost sheets alone containing more than 8,000 different items, and by their aid the several departmental superintendents could see at a glance what item in their operations was below the average, was too costly, and could take the necessary steps to remedy matters. These tables also created a spirit of emulation, of friendly rivalry, between the various departmental units, which alone was a potent incentive toward economy.

So immediate and so marked was the result of this system of cost checking that, according to Charles M. Schwab, a saving of $4,000,000 was effected in the blast furnace department alone in the first year of the Corporation's existence!

As this history does not pretend to be a technical treatise on the manufacture of steel detailed discussion of the many ways and means adopted by the Corporation to achieve economies would be out of place. But some of them are particularly worthy of mention.

One example of economical methods, interesting because of the fact that is was possible only to a company engaged in operations on a tremendous scale, is concerned with distribution of iron ore to its furnaces.

Steel, although much alike to the uninitiated, differs greatly in quality and suitability for different uses. The difference lies not alone in treatment during manufacture but in the kind and character of ore used. And a plant that has large orders for a particular kind, or analysis, of the metal, would find itself handicapped greatly if its receipts of ore included a mixture of the many grades often found deposited in the earth in close juxtaposition. The right ore for the right use at the right time means better and cheaper steel.

Hence the Corporation maintains in the regions from which it receives its ores well-equipped chemical laboratories for testing and sorting the several varieties of ore. Probably the most important of these is at Hibbing, Minnesota, on the line of the Duluth, Missabe & Northern.

As the long ore trains run through Hibbing small samples of the ore are taken out of the cars and subjected to careful analysis. The trains go on their way to Proctor where the extensive yards of the railroad are located, but before they reach that centre the chemical analysis of the ore in different cars has been ascertained and wired ahead, so that the cars composing the train can be sorted and distributed in sidings in accordance with the classification of the ores they contain.

At Proctor new trains are then made up and proceed to the ore docks at Duluth where vessels are waiting to convey the ore to Gary, Chicago, or, by further trans-shipment, by rail to Pittsburgh. And each ship gets the kind of ore needed at the furnace to which it is destined.

This means not only better and more uniform quality in the finished product; it means a saving of several hundreds of thousands of dollars annually to the Corporation.

The Proctor yards themselves are interesting. Stretching two miles with seventy-five miles of track and capable of accommodating 5,400 cars at one time, as many as 469,555 fifty-ton cars of ore have passed through them in one season destined for the Corporation's hungry furnaces all over the country.

Not least among the economies following in the wake of the Corporation's organization were the conservation effected and additional profits earned by manufacturing into merchantable products what had formerly been waste. The manufacture of the so-called by-products of the steel industry had been practised in Germany for many years, and to a limited extent in this country as well. But to get the best results not only was a considerable outlay for new plant equipment required, but the services of a corps of trained and experienced chemists had to be engaged. And this meant such an expense that, especially as the whole by-product idea was in a somewhat experimental stage, companies even of a moderate size as steel companies go hesitated to undertake it. With the Corporation's vast resources, many subsidiaries, and large output the expense of experimenting and investigating was spread out so as to be hardly felt, a careful study of the subject was made, and necessary plants were erected. This has borne fruit not alone in increasing profits for the Corporation and its stockholders but in blazing a path for the steel trade of the United States as a whole (all the larger steel companies have by-product plants

to-day), and finally in effecting an important conservation of the natural resources of the country.

Nor, as events of the last few years have shown, have the benefits of the developments of by-product manufacture been confined to the Corporation, the steel trade, or even the United States. Chemicals derived from coke by-products are necessary in modern warfare. They form the basis of high explosives, gases, etc., and when the European war broke out the world at large realized that Germany, in protecting and fostering her by-product industry, had really been preparing for war. The benzol, toluol, and other chemicals manufactured at the coke by-product plants of the Steel Corporation and other companies in this country played an important part in stopping the German hordes and in saving civilization.

Coke, the fuel used to make steel, is obtained, as is probably universally known, from coal. In the old days of the trade, and to a great extent still, the coal was burned in brick ovens with open tops, known as bee-hive ovens, which produced about sixty tons of coke from each 100 tons of coal and blew out in smoke into the air the oils and gas contained in the coal. Even to-day, in the great coal fields that lie near Pittsburgh, may still be seen the dense smudge that arises in the air from thousands of these ovens. But their day is surely, if slowly, passing. In the modern by-product coke ovens sixty-five to eighty tons of coke are obtained from 100 tons of coal, a gain of nearly 25 per cent. in the case of low volatile and about 8 per cent. with high volatile coals. Nor is this saving all. The gases with their oil content instead of being blown out into the air and burned are conducted through pipes to an intricate apparatus where coal tar, ammonium sulphate, a valuable fertilizing agent, ammonia, and benzol, an important base for high explosives and dyes and also usable as fuel for motor cars, as well as other products are extracted, and the gas itself is made available for use in motor engines

or in illuminating. More than one city to-day lights its street with the gas from by-product coke plants.

As it requires more than one ton of coke to make a ton of steel it is plain that the 25 per cent. saving in the amount of coke obtained from coal by use of the modern by-product ovens means an enormous economy to the Corporation which produces from seventeen to twenty millions of tons of steel a year, and the saving of four to five millions of tons of coal to the country. Nor are the profits derived from the sale of the by-products themselves immaterial.

How profitable is the manufacture of coke by-products is indicated by the fact that for years before the World War, and possibly even to-day, the patentees of one by-product process were usually willing to erect a plant in connection with a steel plant, at a cost of several millions, and to take their pay for it from the profits of the by-products alone, handing the plant over to the steel company at the end of a stated period. They said in effect: "You give us the coal and we will hand you over the coke produced from it; and in twenty years we will give you the plant." The Corporation, however, has always erected its by-product coke plants at its own expense.

Another important economy in its saving of both labor and material is found in the generation, from what were formerly the waste gases of blast furnace operations, of electric power for running the entire steel mill.

Still another by-product of the steel industry, and one that means material profits from waste, is Portland cement. In this is utilized blast furnace slag, formerly not merely a waste but a source of expense as it had to be freighted away from the mills and "dumped." The manufacture of cement from slag had been carried on before the Steel Corporation was formed by the Illinois Steel Co. but only in a small way. The big company extended the cement industry as a side line to steel and erected several new plants, the largest being at

Buffington, Indiana. It now has a capacity of about 45,000 barrels a day.

Greater earnings for the Corporation, larger profits for its stockholders, are represented by the extension of the manufacture of these by-products. But, beyond this, the cultivation of this part of the industry means an appreciable reduction in the cost of manufacturing steel, and consequently lower prices to the consumer and the possibility of higher wages to the worker, as well as the elimination of waste and the conservation of the natural resources of a continent.

Besides integration and the achievement of economies the early history of the United States Steel Corporation is largely a narrative of expansion, the building of new plants, and the acquisition of other companies. First of these acquisitions was the purchase, consummated about a month after the Corporation was organized, of the Bessemer Steamship Co., a Rockefeller concern engaged in traffic on the Great Lakes and which had been closely affiliated with the Lake Superior Iron Mines. This company had a fleet of 56 vessels (included in the number of vessels given as taken over by the Corporation in a previous chapter). The new organization paid $8,500,000 for the stock of the company, or about $150,000 for each vessel of the fleet.

In the same year control of the Shelby Steel Tube Co., a New Jersey company owning the principal basic patents for the manufacture of seamless tubes, and having an outstanding capital of $5,000,000 of preferred and $8,150,000 of common stock, was secured, the exchange of securities being made on the basis of one share of U. S. Steel preferred for 2⅔ shares of Shelby preferred, and one share of Steel common for four shares of Shelby common stock. Practically all the stock of the Shelby company—$4,776,100 preferred and $8,018,000 common—was acquired, giving the Corporation a substantial controlling interest.

In 1901 also the Corporation purchased by exchange of

stock one-sixth interest in the Oliver Iron Mining Co. and the Pittsburgh Steamship Co. The Carnegie Steel Co. already owned the other five sixths of the securities of both these concerns and this gave the Corporation complete ownership.

In December, 1902, an important deal for the absorption of the Union Steel Co. was consummated. This company was a merger, effected only a month or so previous to its absorption by the Steel Corporation, of the Union Steel Co., a $1,000,000 concern owning a large plant for the manufacture of wire rods, wire, and nails at Donora, Pa., and the Sharon Steel Co., a $6,000,000 company making a similar line of products and located at Sharon, Pa. The merged company had an authorized capitalization of $50,000,000 and a capacity of 750,000 tons of pig iron and 850,000 tons of ingots yearly. The purchase was carried out on the following basis: The Steel Corporation guaranteed an issue of bonds on the Union-Sharon properties amounting to $45,000,000, of which $29,113,500 were issued to pay for the properties, $8,512,500 were purchased by the interests controlling the properties, $3,500,000 were reserved to retire bonds outstanding on the property of the Sharon company, and the balance was reserved to provide for future construction and improvements. The actual cost to the Corporation was fixed at $30,860,501, as follows: bonds guaranteed and issued, $29,113,500; underlying bonds assumed, $3,591,000; cash $497,990; total $33,202,490; less liquid assets taken over with the properties, $2,341,989; net cost, $30,860,501.

By this transaction the Corporation acquired five blast and twenty-four open-hearth furnaces, two blooming and slabbing mills, four rod mills, two wire and nail mills, one skelp works, one tube works, one plate mill, one tin plate plant, one sheet plant, a by-product coke plant of 212 ovens, two modern ore steamers, 4,750 acres of coking coal, 1,524 acres of steam coal, and the ownership of two mines and

Down in a Coal Mine

Open Pit Mining—Canisteo Mine

leases on another two in the Mesaba Range with an estimated ore deposit of 40,000,000 tons.

The absorption of this entirely solvent and "going" competitor has been criticized on the allegation that its only purpose could have been to strengthen the larger company's supposed control of the industry, and to eliminate competition. The reasons for the purchase, testified to by Judge Gary, in the Government suit were twofold. The Union Steel Co., he said, owned blast and open-hearth furnaces the securing of which obviated the necessity of the Corporation building others in the same territory, which it needed, and its wire mill was particularly well located for export business, a prime consideration with the Steel Corporation; and perhaps a more cogent reason was to be found in the desire of the Corporation's management to centre the interests of H. C. Frick in the Corporation. Mr. Frick was heavily interested in the Union-Sharon concern and on this account, although a director of the Corporation, he did not take a prominent part in the big company's affairs. His experience and ability made his full coöperation in the directorship desirable and this had a great deal to do with the purchase.

Seventeen months later, in May, 1904, the Clairton Steel Co., which operated three blast and fifty open-hearth furnaces, a rolling mill, billet mill, and blooming mill at Clairton, Pa., was absorbed. The company, controlled by the Crucible Steel Co., was then in the hands of a receiver and its stock was acquired by the payment to the owners of $1,000,000 in U. S. Steel bonds (bought in the open market and costing the Corporation $813,850), and the guaranteeing of bonds to the amount of $10,230,000 outstanding against the Clairton company and its subsidiaries. The purchase also brought to the Corporation a half interest in one ore mine and a lease of another in the Mesaba Range, about 20,000 acres of mineral lands in the Marquette Range, 2,644 acres of coking coal lands, and working assets of nearly $3,000,000.

Smaller acquisitions by the Corporation in the early years of its existence included the Troy Steel Products Co., which owned works at Troy, N. Y., with a capacity of about 200,000 tons of slabs and skelp a year, and the Trenton Iron Co., operating a rod mill with a capacity of some 18,000 tons. The Troy company was bought in 1902 and operated a very short time, it having proved unprofitable.

Hardly had the United States Steel Corporation commenced operations than the directors found themselves faced with the necessity of raising additional working capital. The $25,000,000 cash provided by the under-writing syndicate proved insufficient for the needs of the giant industry. Obligations entered into by the constituent companies before the merger, it was discovered, called for the expenditure of approximately $15,000,000, and fully $10,000,000 was needed to refund what were classified as "purchase money obligations." It was also thought desirable that expenditures should be made for improvements and additions which, it was estimated, would increase the big company's earning power at least $10,000,000 a year. Furthermore, it was deemed advisable to add from $10,000,000 to $15,000,000 to the Corporation's fluid assets to provide for further expansion and to strengthen reserves, as it was obvious that if the Corporation were to need ready cash in a time of stress the amount wanted would not be a matter of a million or so but of many millions and it would be impossible to obtain a very large sum at such a time except at a great loss. By increasing fluid assets the probability of the need for borrowing would be minimized.

The issuance of $15,000,000 new preferred stock or second mortgage bonds was discussed at length, but these courses were not favored as either, aside from initial expense in commissions to underwriters, would have increased fixed charges against earnings—a stock issue permanently and a bond issue for the term of its life—while an increase in capital

in either of these two ways so shortly after the formation of the Corporation would almost certainly have attracted unfavorable comment and might have severely affected the value of their holdings to owners of its stock.

Eventually what was known as the Bond Conversion Plan was adopted and promulgated. It provided for the issuance of $250,000,000 new second mortgage bonds and the redemption of $200,000,000 of the outstanding preferred stock, holders of the stock being given the opportunity to subscribe for the bonds to the extent of 50 per cent. of their holdings, 40 per cent. through deposits of stock and 10 per cent. in cash. A syndicate, headed by the Morgan firm, was formed and guaranteed to turn in not less than $80,000,000 in stock and $20,000,000 in cash in exchange for $100,000,000 of the bonds to be issued. For its work the syndicate was to receive 4 per cent. on the total value of the bonds actually issued under the plan, the house of Morgan receiving one fifth of the commission, or four fifths of one per cent.

An actual, though not immediate, money saving, it was pointed out, would be effected under the plan. Although the commissions to be paid the syndicate, $10,000,000, would be larger than in the case of either of the two other ways suggested for raising the new capital required, the net saving in annual interest charges would be $1,500,000, which would not only refund the commission in a comparatively short time but would be more than sufficient to meet sinking-fund requirements for paying off the entire second mortgage issue when it became due, or in sixty years. The actual gain in working capital, should the plan prove a success, would be $40,000,000.

(Redeeming $200,000,000 of 7 per cent. preferred stock would save dividend charges of $14,000,000 yearly, for which would be substituted a charge of 5 per cent. on $250,000,000 bonds, or $12,500,000. The amount required for the sinking

fund would be slightly more than $1,000,000 or less than the net annual saving. And a permanent capital reduction would be effected at the end of sixty years.)

No other action of the Corporation's management, it would be safe to say, has met with such widespread disapproval as did the bond conversion plan, much of the criticism coming from financial experts who questioned the propriety of increasing the bonded debt of the company to so great an extent with so small an actual gain in working capital or resources. It was characterized as dangerous financing and it is known that not all the Corporation's directors were themselves in full accord with the operation. At a meeting held on May 19, 1902, the plan was submitted to a vote of the stockholders and here considerable opposition developed which led later to the bringing of four suits to prevent its consummation. One of these suits which attracted a good deal of attention was brought by J. Aspinwall Hodge, a New York lawyer. But the Court of Errors and Appeals of New Jersey eventually dismissed these suits and the offer to exchange stock for the bonds—delayed by the suits—was finally made to stockholders in the spring of 1903.

In view of the fact that its avowed object was the raising of $40,000,000 new cash capital, said to be necessary, the plan can hardly be said to have been an eminent success. Exclusive of the syndicate operations only $45,200,000 of preferred stock was exchanged by stockholders for the bonds and the cash subscriptions for the issue from the same source amounted to the insignificant sum of $12,200. The syndicate, at its dissolution, turned in a total of $150,000,000 in preferred stock and $20,000,000 in cash (this, of course, included the $45,200,000 stock and $12,200 cash of the outside stockholders), a total of $170,000,000, and instead of the desired $40,000,000, the actual cash gain to the Corporation from the transaction was $20,000,000 less a syndicate commission of $6,800,000, or $13,200,000 net.

As the Corporation has been able to meet its full preferred dividend requirements since its formation, however, it is obvious that as matters turned out it has saved $2,000,000 a year in interest charges or in eighteen years since elapsed $36,000,000, more than five times the commission paid the syndicate. The yearly saving is also approximately double the $1,010,000 which the sinking fund calls for, so that the net gain to stockholders from the reduction of the preferred capital is $990,000 a year. Looking into the distant future the saving after the bonds are paid off in forty-two years will be $10,500,000 annually.

One of the criticisms hurled at the plan was that its real object was to enable the syndicate, and especially the banking house of J. P. Morgan & Co., to make a profit at the expense of the stockholders. The facts were that the syndicate took a big risk of the bonds selling at less than par after issuance, which they did, and while it is impossible to ascertain the exact gains or losses incurred, the understanding is that Mr. Morgan and his associates in the syndicate actually suffered a loss of something like $8,000,000 from the deal.

It was perhaps natural that the management of the Steel Corporation, in its early existence, should have been more or less divided against itself. This danger was one of the factors urged by its critics against the possibility of its success. Among its directors were Phipps, Frick, and Schwab, old Carnegie partners, and firm believers in the Iron Master's policy of getting your competitor before he got you. Gary was the prominent figure in another faction that had the foresight to perceive that a new day was dawning in industry, an era of coöperation between manufacturer and manufacturer, to realize that the very size of the Corporation rendered it subject to the enmity of smaller concerns and to legal attack and public disapproval, and that the only way of overcoming this danger was to gain the good will of all by an open and straightforward policy. As the years passed

these differences were gradually smoothed out. The directors, as a whole, came to see that Gary's policy was right, in fact the only one to pursue, and harmony was gradually brought out of the conflicting elements and opinions.

With the passing of the years Gary gained the ascendency in determining the courses of action of the Corporation. Always its chief executive officer he eventually became potential. And it is a high tribute to his judgment and foresight that all of those who disagreed with him at first have later admitted, as did Schwab, in a published speech, "He was right and I was wrong."

Charles M. Schwab did not long remain as president of the Corporation. His health broke down shortly after its formation and, in 1903, he resigned his position and sailed for a long rest abroad, later coming back to America to purchase control of a small independent concern and to build up an organization of his own that to-day ranks next to United States Steel among the steel-making companies of the United States.

At the time of Schwab's resignation the Executive Committee was abolished, the position of chairman of the Board created, and Gary was elected to that office. William Ellis Corey, President of the Carnegie Steel Co., was chosen President of the Corporation to succeed Schwab, on the latter's recommendation, and continued in this capacity until the end of 1910, when he resigned to be succeeded by James A. Farrell, the man who had built up the Corporation's export trade and who was then president of the United States Steel Products Co.

Before the new-born Corporation had passed the first anniversary of its birth Robert Bacon resigned as chairman of the Finance Committee and was succeeded by George Walbridge Perkins, another Morgan partner. Mr. Perkins continued in this office for several years, but later retired, and since then Judge Gary has filled the offices of chairman

of the Finance Committee and chairman of the Board. He is by the Corporation's by-laws named "chief executive officer in general charge of the affairs of the Corporation."

In the first nine months of its operations the United States Steel Corporation reported net profits of $84,779,298. After the payment of sinking fund and interest charges on the bonded debt $61,420,304 was left for distribution to stockholders. Dividends of 5¼ per cent. (at the annual rate of 7 per cent.) on the preferred stock, and 3 per cent. (at the annual rate of 4 per cent.) on the junior issue, were paid, the balance after these disbursements, $19,414,497, being carried to surplus account.

In 1902 a gross business of $560,510,479 was done and the net profits therefrom were $133,308,764. The year was a fairly profitable one and although a special appropriation of $10,000,000 for new construction was made and more than $14,000,000 was put aside for depreciation and extraordinary replacement, the big company was able to show the full dividends earned on its stock of both classes and a surplus balance of $34,253,657.

The following year was one of general business depression, and the steel industry, the barometer of trade, was seriously affected. The result to the Corporation is shown best by the simple fact that on December 30, 1903, unfilled orders on the books of the subsidiary companies aggregated 3,215,123 tons, against 5,347,253 tons a year previous. This falling off in orders was accompanied by declining prices, and the directors of the Corporation were impelled to reduce the quarterly dividend on the common stock for the third quarter from 1 per cent. to one half of 1 per cent. and to eliminate the junior dividend altogether in the final quarter. Gross sales for the year were $536,572,871 and net profits $109,171,152, the surplus for the period being $12,403,917.

Several changes in the make-up of the subsidiary companies occurred in this year. The most important was the in-

corporation of the United States Steel Products Export Co. (the "Export" was later dropped from the title), headed by Farrell, to conduct the Corporation's foreign business. The Carnegie and National Steel companies and the American Steel Hoop Co. were merged into one concern, known first as the National Steel Co., the name being later changed back to the Carnegie Steel Co. Lastly, the American Tin Plate Co. and the American Sheet Steel Co. were consolidated as the American Sheet & Tin Plate Co.

The depression that began in 1903 lasted well into the year following and affected earnings of the Corporation to such an extent that, for the first and only time in its history, the wages of the men employed in the plants were reduced. (Incidentally wages were quickly restored.) Gross sales for the year were only $444,405,431, and net profits, $73,176,522. No special appropriation for new construction was made and, despite the small profits, the Corporation managed to show a surplus after the payment of the full preferred dividend of $5,047,852.

But the wave of prosperity was returning. The first signs made themselves felt in the late months of 1904 and the Corporation's earnings showed marked improvement in 1905. Gross sales amounted in value to $585,331,736 and net profits of $119,787,658.

A surplus of $43,365,815 was reported after the preferred dividend payment, but $26,300,000 was deducted for new construction in contemplation so that the net amount added to surplus was $17,165,815. In this year production reached the highest mark so far recorded by the big company, the output of pig iron being 10,172,148 tons, of ingot steel nearly 12,000,000 tons, and of rolled products 9,226,386 tons.

In the annual report for 1905 is found the following statement by Judge Gary: "It has been decided to construct and put into operation a new plant to be located on the south shore of Lake Michigan, in Calumet Township, Lake County,

Indiana, and a large acreage of land has been purchased for that purpose. It is proposed to construct a plant of the most modern standard. . ."

About the time those words were being written work on the new plant was being started and the foundations of a new city, now having a population of 56,000, were being laid. It is appropriate that the name chosen for this town should have been Gary, although Judge Gary had nothing to do with the selection of the name.

All previous records for production and profits were shattered in 1906. The betterment in steel conditions that started in 1905 continued throughout the ensuing year, and, indeed, until the latter part of 1907, when the disastrous panic occurred. The Corporation's report for 1906 showed that it had increased its capacity for pig iron production more than 63 per cent. and its steel capacity nearly 57 per cent. between the date of its organization and January 1, 1907, and this increase enabled it to take advantage of the business betterment and to profit thereby. In 1906 the Corporation's blast furnaces poured out 11,267,377 tons of pig iron, while its steel plants produced more than 13,500,000 tons of ingots and 10,578,000 tons of finished material. The gross sales of the year amounted to $696,756,926, and the net profits to $156,624,273.

These large earnings justified the resumption of dividends on the junior stock and 2 per cent. on the issue was paid. The balance after dividends was $62,742,860, but special appropriations for proposed expenditures on the Gary plant and for other purposes were made, calling for $50,000,000, this making the net carried to surplus account only $12,742,860.

Another important event of the year in the Corporation's history was the incorporation of the Universal Portland Cement Co., which was formed to take over the cement plants operated by the Illinois Steel Co., and to erect new

plants for the manufacture of this profitable by-product. The production of cement had grown from 486,357 barrels in 1902 to 2,076,000 barrels in 1906. The Universal Company immediately started work on the erection of two new plants, one at Buffinton, Indiana, within a few miles of the Gary plant, and the other at Universal, Pa., near Pittsburgh. The results of this enterprise have entirely justified the expectations of the Corporation's management, and the manufacture of the by-product has increased until an output of 11,197,000 barrels was reached in 1913.

But the most notable event of 1906 was the negotiation of a lease by the Corporation on the ore properties owned by the Great Northern and Northern Pacific Railway companies. This was commonly known as the Hill Lease.

That the Corporation would eventually make some arrangement to secure control of the mining rights on the Hill ore properties had long been believed in the steel trade. It was pointed out by trade authorities that the big company did not have ore reserves commensurate with its immense output, and the obvious conclusion was that it would not fail to secure such reserves sooner or later. The vast properties in the Mesaba Range owned by the railroad dominated by James J. Hill constituted, it was claimed, the only commercially valuable supply of importance which had not yet been appropriated by one steel company or another, so the natural conclusion was that the Corporation must eventually attach to itself these supplies of ore.

Negotiations leading up to the lease went on for several years before the matter was finally brought to a head in December, 1906. The lease, which was probably the most voluminous document of its kind ever written, gave the Corporation the right to mine the Hill ores until exhaustion, or, at the Corporation's option, until January 1, 1915, the exercise of this option being contingent upon a two-year notice to be given before that date. The Corporation

positively declined to enter into the lease unless it contained provision for concellation, and it later exercised this right, the directors at the close of 1912 serving notice of their intention to abandon the lease in two years.

Comprised in the Great Northern ore land were some of the richest and best iron deposits in the country. Of a total area of more than 65,000 acres owned or leased by the Hill interests, 39,296 acres with an estimated ore content of something like half a billion tons were included in the lease to the Great Western Mining Co., a Steel Corporation subsidiary and the nominal lessee.

The volume of ore to be mined and the royalties to be paid were arranged on an ascending scale. In 1907 the Western company was to take out 750,000 tons of ore and this tonnage was to be increased by as much again every year the lease continued up to 1917, when the tonnage to be mined was fixed at 8,250,000 tons, at which figure it was to remain thenceforward until the contract expired by reason of ore exhaustion.

Royalties on the ore mined were based on a price of eighty-five cents per ton of dried ore with a metallic content of 59 per cent. for the first year of the lease, this base price being increased by 3.4 cents a ton each year—i.e., to 88.4 cents in 1908, 91.8 cents in 1909, etc. To this royalty was to be added transportation charges of 80 cents a ton to the docks at Superior, Wis., the contract providing that all the ore was to be shipped via the Great Northern Railway. For each variation of 1 per cent. above or below the 59 per cent. metallic content, it was further stipulated, the base price was to be increased or diminished by 4.82 cents a ton.

Critics of the Corporation have charged that the Hill lease was entered into with a view of giving the big company a practical monopoly of the ore reserves of the country. Those responsible for the deal have strongly asserted that their sole object was to ensure an adequate ore reserve for the future.

The question resolves itself into one of motives and is therefore not susceptible of proof. But whatever were the motives of the Steel Corporation's management the fact remains that, according to the opinions of the best-qualified experts outside the Corporation itself, the big company, at the time the lease was made, did not have a supply of ore such as its vast output demanded, and probably does not now have such a necessary supply although it has acquired large reserves in Cuba and elsewhere. Further, it is doubtful if, outside of the Hill holdings, a large enough reserve of commercially available ore is to be obtained in the United States.

The claim that the royalties paid under the Hill lease were too high is supported by the undisputed fact that royalties paid on other ore deposits in the same territory at the time of the signing of the contract were much lower than those paid under the lease by the Corporation. Unusual conditions governed this transaction, however. The lessors were well aware of the Corporation's need of ore and that they were probably the only ones in a position to fill this need. They were therefore able to drive a hard bargain. The price originally demanded by Mr. Hill and his associates, it is understood, was one dollar a ton and it took some years' negotiations before a price which both parties to the matter would accept could be arrived at.

What was the reason for the cancellation of the lease? It is generally thought that the directors of the Corporation were impelled to their decision by the report of Commissioner of Corporations Herbert Knox Smith, who conducted a searching investigation into the Corporation's activities and severely criticized the lease, and by the fear that it would be made much of by the Federal Government in its suit for the dissolution of the "Steel Trust." This suit, it is true, had not actually been filed when the lease was abandoned; but it was so imminent that the Corporation's directors must have believed it was about to be instigated. And these con-

siderations did have weight in bringing about the decision. But the more cogent reason was a purely business one—the lease had not proved as profitable as had been hoped. The iron content of the Hill ores had not measured up to expectations, the cost of concentrating the ore proved too high, and on the whole the deal had become rather a burden than otherwise to the lessee.

Up to the end of 1906 the United States Steel Corporation had spent more than $200,000,000 in the acquisition of new properties, the construction of new plants and the extension of old. Its productive capacity had been increased enormously. Its plants were now in excellent shape, its organization in perfect working order. Prices were high and it had, at the close of the year, nearly 8,500,000 tons of business on its books. Its early difficulties were past and it seemed about to enter into the heyday of its prosperity.

CHAPTER IV

THE TENNESSEE PURCHASE

ON THE events of the year 1907 the United States Steel Corporation must, to a certain extent, stand or fall at the bar of public judgment. This was the year of the panic and of the Tennessee Coal, Iron & Railroad purchase.

The panic, enemies of the Corporation have asserted, was precipitated by the big "trust" by the immoral use of its immense financial resources to enable it to "gobble up" the properties of the Tennessee company, a competitor said to have been making big inroads into the business of the larger concern and which it had therefore become necessary either to destroy or absorb.

The friends of the Corporation, on the other hand, are emphatic in asseverating that the competition offered by the Tennessee company was not such as to cause anxiety to the management of the Steel Corporation, that it was not a very valuable property, and that the Corporation purchased its stock only upon solicitation by the interests controlling the company and their assurance that a refusal to do so would result in the failure of an important security house, which would add greatly to the severity and danger of the panic. They claim further that the price paid was more than the actual value of the stock and that, far from using any advantage it may have had to squeeze the smaller concern, the "Steel Trust," against the better judgment of its management and with the single purpose of alleviating the panic dangers, paid for the securities it took over something like

60 per cent. more than good business practice seemed to warrant.

If the claims of the first are correct and the Corporation did use its power to force a competitor to the wall, regardless of the fact that in so doing it was bringing misery and calamity to the ninety millions of people of the United States, this act alone must be more than sufficient to convict it on a more serious charge than "monopoly in restraint of trade"—of high treason and betrayal of the trust which big business, willy nilly, undertakes. But if the Corporation, through its directors, put the national welfare before all other considerations this, conversely, should prejudice public opinion, properly informed, in its favor. And this is why the year was by far the most important epoch in the Corporation's history and its events are worthy of careful consideration.

After a careful search made by the writer through all the evidence submitted by the Government to this end in its suit against the big company, he failed to find one iota of evidence which connected the Corporation with the panic or upheld the charge that it conspired to force the Tennessee stockholders to sell. A man who had been a member of the syndicate that controlled the fortunes of the Tennessee company before it was absorbed and who, if the allegations referred to are correct, was one of those who suffered at the Corporation's hands, in reply to the question: "Did the Steel Corporation use its power to create the panic of 1907 so as to gain possession of the Tennessee stock?" replied: "Absurd. The charge is baseless—except in politics. The sale of the Tennessee company was an incident arising in the course of the panic, not a cause. The Corporation was offered a chance to get what I consider a valuable property and seized it. But let me tell you," he added, "the Corporation did not get the property cheap."

And the Supreme Court, in its opinion, said on this subject:

"There is, however, an important circumstance in connection with that of the Tennessee Company which is worthy to be noted. It was submitted to President Roosevelt and he gave it his approval. His approval, of course, did not make it legal, but it gives assurance of its legality, and we know from his earnestness in the public welfare he would have approved of nothing that had even a tendency to its detriment. And he testified he was not deceived and that he believed that 'the Tennessee Coal and Iron people had a property which was almost worthless in their hands, nearly worthless to them, nearly worthless to the communities in which it was situated, and entirely worthless to any financial institution that had the securities the minute that any panic came, and that the only way to give value to it was to put it in the hands of people whose possession of it would be a guarantee that there was value to it.' Such being the emergency it seems like an extreme accusation to say that the Corporation which relieved it, and, perhaps, rescued the company and the communities dependent upon it from disaster, was urged by unworthy motives."

The Tennessee Coal, Iron & Railroad Co. was a reorganization of an earlier concern of the same name located in Alabama. The reorganization brought into control of the company new and powerful interests, and these spent a good deal of money in improving the plants, so that, about the beginning of 1907, it was pointed to as a probable important competitor of the Corporation. It was also considered as the nucleus for a possible merger of the steel-making concerns of the South such as would be able to cut severely into the Corporation's business. Not long before the panic broke the company secured an order from the railroads controlled by the late E. H. Harriman for 150,000 tons of steel rails and it was supposed by some that the loss of this order had caused considerable worriment to the heads of the Steel Corporation—which doubtless it did. Then came the panic,

Mine Stables

Modern Coal Mining by Machinery

and when its dust cleared away the Tennessee company was a subsidiary of the "Steel Trust." The sequence has served to lend plausibility to the charges made against the Corporation in connection with the purchase. But a full recital of the events bearing on the deal tends to throw a different light on the matter, and an attempt to set down the more important of these details will be made here.

Emphasis has been laid on the Harriman order, particularly because the Tennessee company had contracted to supply the lines controlled by the great railroad magnate with the new open-hearth steel rail, then coming into popular favor with the railroad experts and which to-day are used almost exclusively by the larger transportation systems. It has been alleged that the Corporation was very desirous of adding to its properties the plants making this new kind of steel rail and getting immediate control of their manufacture. The facts are that the southern company did not make a pure open-hearth rail, its steel being made by a combination of the Bessemer and open-hearth processes, and the Corporation at the time was engaged in building its new plant at Gary, a plant which was to include a large rail mill to make open-hearth rails exclusively. When the Corporation took charge of the Tennessee properties it was found that the company's rail mill was being operated at a loss of nearly $4 a ton. Further, a very large percentage of the rails which had been supplied the Harriman roads before the transfer of the properties proved defective and the new management had to bear the loss of replacing these.

It is unnecessary and futile, in this brief chapter, to go fully into the story of the panic of 1907, or of the events that preceded it. Suffice it to say that the panic followed a period of enormous expansion and of extension of credit eventually carried to a point where business overreached itself and, in a country lacking an elastic currency system, such as the United States then was, financial stringency was bound to

follow. The first rumblings of the coming storm went unheeded, and it was not until late in the year that there was any realization of the desperate state of affairs. Then one big trust company closed its doors and was followed by others. Banks stopped specie payments, stocks tumbled headlong on the exchanges of the country, industry halted, throwing thousands out of employment, and the financial hurricane swept over the country, leaving ruin in its wake and making its effects felt over the whole world.

While the panic came like a thunderclap to the average citizen, without warning, the big bankers had seen the danger threatening and had made an effort to prevent any occurrence which might precipitate matters. In the latter part of October rumors gained circulation that the Knickerbocker Trust Co., one of the leading financial institutions of New York City, was in trouble and the late J. Pierpont Morgan, who had assumed the leadership of the country's bankers in the crisis, and others had an examination made of the company's affairs with a view to rendering it assistance. Apparently the result of this investigation was unsatisfactory. Anyway, the Knickerbocker Trust Co. was abandoned to its fate and, at fifteen minutes to one, on October 22nd, closed its doors after a sensational run, many stock exchange firms being overwhelmed in the crash.

Thus did the panic storm break. Rumors of trouble in connection with other institutions then came thick and fast, and one concern, the Trust Co. of America, was especially talked of. This institution had a capital of $2,000,000 and resources of $74,000,000, including $12,000,000 cash in its vaults at the time. Under normal conditions it was perfectly solvent and able to meet its depositors' claims, but that it was not in a position to withstand a prolonged run was proved by subsequent events. Realizing that the failure of the Trust Co. of America would make the crisis far more acute Mr. Morgan and his associates resolved to come to its assist-

ance, provided it could prove that its statements of condition were correct.

Meanwhile, George Cortelyou, Secretary of the United States Treasury, had hurried on to New York from Washington and on the night of the 22nd he held a conference at the Hotel Manhattan with Morgan, George W. Perkins, one of his partners, James Stillman, and Henry P. Davison of the National City Bank, and others. After the conference, which lasted over the greater part of the evening, Perkins and Davison adjourned to the Union League Club, where they were met by Oakleigh Thorne, president of the Trust Co. of America, who had been summoned by telephone.

These were strenuous days for bankers. No coming downtown late and leaving early. The confab at the club started at nearly midnight and lasted until long after. Thorne made a statement of the financial condition of his company and the others promised that, if the facts were as represented, he would be assisted. No time was to be lost. Perkins immediately arranged for the examination and Thorne was at his desk at half-past six on the morning of the 23rd. By seven the examiners were at work.

But the newspapers were on the watch, and the fact that the Trust Co. of America was in need of assistance was known and discussed over the breakfast tables of New York, and, in fact, of the country. By the time the company opened its doors that day there was a clamorous mob outside, each individual seeking to save himself before the crash came, and the crowd surged through the doors and up to the paying teller's window, demanding its money.

In vain did the officers of the company put seven tellers to work instead of the usual one, in vain were all deposits paid promptly and unhesitatingly. Denser and denser grew the crowd of depositors, and it became obvious that the millions that had been passed over the counters in the morning hours would not suffice to stem the tide. Thorne hurried over

to the Morgan offices and there succeeded in obtaining $2,500,000 immediately. This loan was subsequently augmented by another of $10,000,000 made a few days later, and a third of $15,000,000 made early in November.

On this one day, October 23rd, $13,500,000 was paid out over the trust company's counters! But this was not enough to stem the run which continued for more than a week and did not abate until, so far as can be estimated, something between $30,000,000 and $35,000,000 was paid to depositors.

But the Trust Co. of America was saved. It has been claimed that the price of its salvation was the surrender by its president of some 5,500 shares of Tennessee Coal, Iron & Railroad stock which he owned. It seems plain, however, that the suggestion that the Steel Corporation should take over the control of the Tennessee company came first from the people who had the majority stock of the company and after the beginning of November, before which time the bankers, headed by Morgan, had loaned the trust company $12,500,000 without any mention of or question regarding the stock. It also appears that the transfer of Thorne's stock to the Corporation had no connection whatsoever with the trust company's difficulties and its extrication therefrom, but was part of a separate and distinct transaction.

Particular attention has been given here to the affairs of the Trust Co. of America, because of the allegations connecting the help rendered the company with the Tennessee purchase. But it really constituted only a small part of the situation with which Morgan and his fellow-bankers were faced. There were many others that needed help, banking institutions, investment houses, brokers, and so on. The whole financial community had turned to Morgan as its Joshua to lead it out of the desert. Upon his shoulders fell the burden of saving the country from financial ruin.

The Morgan library became as the headquarters of an army. Here were congregated at all hours of the day and

night bankers, brokers, business men of all kinds, both those who needed help and those who could assist the banker in the work he had thrust upon him and the arduous duties which he had assumed. Men rushed in and out of that library, pleaded for help, begged for information and, awaiting their turn, slept in its luxurious chairs.

The task that Morgan and his associates had undertaken was one of exceedingly great difficulty. Despite all that had been done to dam the torrent of financial disruption and the fact that each weak spot was strengthened as soon as discovered, the banker knew that his herculean efforts might be brought to nothing by one big failure which would let loose the panic fears it was sought to allay. Hence it may be imagined with what consternation the financier received the news, brought to him by Lewis Cass Ledyard, a prominent lawyer and a close friend of his, that Moore & Schley, one of the leading brokerage firms in the "Street," was in serious difficulties and needed several millions of dollars to save it from disaster.

Moore & Schley was deeply mixed up with the affairs of the Tennessee Coal, Iron & Railroad Co. One of the members of the firm was a member of the syndicate that controlled the company, and Tennessee stock constituted a considerable proportion of the collateral which it had put up to secure loans for itself and its customers. This stock, considered good collateral in normal times, failed to find favor with the bankers to whom Moore & Schley was heavily committed in the time of stress, and the brokers were called on to replace the securities with others of a more approved character—which they were unable to do—or to suffer the calling of their loans and consequent bankruptcy.

Only two courses were open to the brokers, either to borrow a sum large enough to meet their loans or to negotiate an exchange of the Tennessee stock for some other security which the banks would accept. They chose the latter and,

realizing that the United States Steel Corporation was the only possible buyer of the Tennessee stock, approached Morgan through Ledyard to that end.

Suggestions that the Steel Corporation should purchase control of the Tennessee properties had been made in the past to the Corporation interests by one or more of the directors of the southern company. It does not appear, however, that these suggestions were authorized by the Tennessee syndicate as a whole. Be that as it may, they came to naught, as the directors in question seemed to have a very high idea of the value of the Tennessee stock, and the divergence of opinion on this question between them and the possible purchasers was so great that no middle ground was possible. Never did the tentative offers to sell reach a point where they were worthy of the term "negotiations."

One of the reasons alleged for the Steel Corporation's supposed fear of the Tennessee company's competition was that the company was the potential basis for a merger of the steel concerns in the South which would not only be strong enough to offer a stubborn fight to the "trust" for business in the section below the Mason and Dixon line, but would have a distinct advantage over it in exporting steel to Mexico and Central and South America.

John A. Topping, head of the Tennessee Coal, Iron & Railroad Co. and of the Republic Iron & Steel Co.—dominated by the same interests—had actually taken steps for the establishment of a market on the Gulf coast. In the Rivers and Harbors Act of 1899 the construction of locks and dams and other improvements on the Warrior River so as to give slack water communication between Birmingham, Ala., near which city the mills of the Tennessee company were situated, and Mobile, was decided on. But the matter rested there until Topping, by his efforts, secured an appropriation to carry out the improvements, since completed. Not only would the water route have been important to the

Tennessee company in regard to the markets mentioned, but it would have enabled the company to enter the markets on the northern Atlantic coast of the United States, from which it had been debarred by the high rail freight rates.

Reports that a steel merger in the South was contemplated or actually under way had been circulated from time to time. The three companies mentioned as constituting the consolidation were the Tennessee Coal, Iron & Railroad Co., the Republic Iron & Steel Co., and the Sloss Sheffield Steel & Iron Co. Other less important concerns were also suggested. The Sloss Sheffield company was engaged entirely in the manufacture of iron and was a rather small concern as compared with the steel giants of the day. But it was conservatively capitalized and managed and had at the time an unbroken dividend record in respect to its preferred stock. At its head was Colonel J. C. Maben, a veteran iron maker and one of the best known and most respected figures in the industry. Colonel Maben was approached by one of the Tennessee directors with a merger proposition, but refused to consider it because, as he has since said, he did not think the financial condition of the Tennessee company sound. If there had ever been any possibility of the merger going through Colonel Maben's attitude would have effectually stopped it.

From this it would appear that the proposal to merge all the larger steel and iron companies of the South never developed beyond the nebulous stage. However, a consolidation of the two largest of these concerns, the Tennessee and the Republic companies, had been definitely decided on. The two concerns were controlled by the same financial interests and their managements were practically identical. While it is not unlikely that some of the directors of the companies, among whom were John Warne, or "Bet You a Million" Gates, looked upon their investment therein first and foremost as a speculation and would, in consequence,

have regarded favorably the opportunity to sell out at a fair figure, there were others who had implicit belief in the possibilities for the expansion of the steel industry in that section and considered that they had in their hands the opportunity to build up a southern steel empire. The amalgamation of the two companies, naturally, would have been the first step to this end, and, as has been stated, it had been decided on and its consummation was being delayed only until what seemed to be a favorable time should arrive. But their dream of empire was doomed to disappointment.

Another reason advanced for the Steel Corporation's supposed anxiety to get its clutches on the Tennessee Coal, Iron & Railroad Co. was that the latter concern owned ore mines estimated to contain some three quarters of a billion tons of iron ore, besides coal resources placed at two billion tons, as well as limestone and other raw materials necessary in the manufacture of steel. The company also enjoyed the undoubted advantage of having both its coal and iron in the ground within a twenty-five-mile radius of its ovens and furnaces—it was "sitting on its raw material"—whereas the steel mills in the North were great distances from their raw supplies—Pittsburgh, for instance, depending for its ore on the vast iron ranges of northern Minnesota.

The proximity of its mines is, of course, a material advantage to the Southern company, as transportation charges on raw material play a very important part in the cost of steel making. It is perhaps not so generally known that this advantage is to a large extent counterbalanced in other ways. Were it not for the saving thus gained it is questionable whether it would be possible to manufacture steel commercially in the South.

In the Hill lease the price which the Steel Corporation was to pay on the ore taken out of the Great Northern holdings in the Mesaba region was based on an iron content of 59 per cent. Northern ore averages well over 50 per cent. metallic

content and that yielding much under 50 per cent. is not considered commercially available, although some of the lower grade ore is treated by a concentrating process and made so. Moreover, much of the ore of the Great Lakes region lies in immense bodies within a few feet of the earth's surface and is mined by the simple process of removing the top layer of soil—technically known as stripping—and then putting a steam shovel to work.

But the ore beds from which the Tennessee company draws its raw supplies average well under 40 per cent. in iron, actually from 36 per cent. to 37 per cent.; nor does the ore lie near the surface, and the process of making it into iron and steel is necessarily more tedious and more costly than is the case with the richer and more easily reached northern iron.

In the first place, more labor is required, particularly in winning the raw materials, as the coal fields are badly disturbed geologically, making the expense of mining very much higher. And the ore is nearly all hard ore, requiring to be drilled, blasted, and crushed. Further, the low iron content requires the use of about one and three quarter times as much ore per ton of pig iron, and the poor quality of the Alabama ore necessitates the use of about half as much again of coke to make a ton of iron as compared with that coming from the Lake Superior district.

The high phosphorous content of southern pig iron prevents the use of the cheaper Bessemer process which is used on the low phosphorous pig iron of the northern district and the fact that no Bessemer steel industry exists in the South to furnish the scrap required in the straight open-hearth process prevents the economical use of this process in the South, a disadvantage which does not exist in the North, where scrap is available. Hence it is advisable in the Birmingham district to use a combination of the two processes, the iron being first bessemerized, then worked through the

open-hearth furnace. And this adds greatly to the cost of converting a ton of pig iron into steel.

Another difficult problem with which the Tennessee company had to contend was that of labor. The large majority of the common labor supply in the South is made up of negro labor and, while the colored man often makes a satisfactory worker if properly "bossed," he is unreliable and too often has as his motto "never do to-day what you can put off until to-morrow." Given assurance of enough to eat for a day or two and a dollar in his pocket, he is likely to refuse to work until again urged by the spur of necessity—childlike, his vision of the future is limited. And this disposition to take life from day to day is, to put it mildly, trying to the manufacturer who needs a full force to get out tonnage.

And even when the negro is reliable he is seldom fitted to take positions of responsibility, so that workmen must be brought from the North to undertake the skilled work or that requiring managerial ability. And as the opportunities for such men are greater in the North, the keeping of an efficient organization together means a constant struggle on the part of the manufacturer, becomes an ever-present and pressing problem.

The expansion of the steel industry in the South is further limited by the fact that it is an agricultural, not an industrial, section. A steel mill does not, in the main, make products to be sold direct to the ultimate consumer. Its output must be manufactured by other companies into machinery, locomotives, and a thousand and one other things. Its customers are other industries, and there are comparatively few industries in the South. Thus it would seem that the formation of a great southern steel merger or the expansion of the Tennessee company to a size sufficiently large to cause apprehension to the "Steel Trust" was a very remote contingency.

It might not be out of place here to point to the signifi-

cance of the fact that the Republic Iron & Steel Co., which owns important tracts of ore and coal lands in the South just as conveniently situated to its furnaces as are the Tennessee's holdings, has not made marked use of the supposed advantages which it obtained from its southern properties. The company's expansion since 1907, under John A. Topping's able management, has been great, but it has been almost entirely in the North.

These things, the conditions that surrounded and influenced steel making in Alabama, were well known in the steel trade. Therefore it was hardly to be wondered at that when Ledyard, through Morgan, suggested to the directors of the Steel Corporation that the controlling interest in the Tennessee company should be purchased by its bigger and richer rival, the proposal was not enthusiastically received. The deal, for any other reason than the saving of the financial situation, was opposed by both Gary and Frick. The latter, in particular, seemed to think that almost any other course was to be preferred to an absorption of the Tennessee company, and it was he who suggested that a loan of $5,000,000 be proffered Moore & Schley to save them from bankruptcy. But the members of the firm rejected this offer.

It was not a time for delays, for dickering. The financial situation was a seething volcano which might erupt at any minute. From Friday, November 1st, when Ledyard first presented the matter to the banker, meetings of the Steel Corporation's finance committee and conferences between Gary and Frick and representatives of Moore & Schley were held almost continuously until Sunday, November 3rd, on which date the Steel Corporation management finally yielded to the insistence of the brokers and agreed to purchase the controlling stock of the Tennessee Coal, Iron & Railroad Co. at par, or $100 a share, about twice the value that had been set on the stock by Gary in his earlier talks with Ledyard.

Followed the now famous visit to Washington. The deal, though practically completed on Sunday, was not formally closed. Gary insisted that the President of the United States should be consulted and that his attitude should be ascertained, and Frick demanded and received an assurance from Morgan that every assistance possible would be rendered other companies which were in difficulties before the purchase should be consummated.

At midnight Sunday a special train left Jersey City bearing the two Steel Corporation directors and they were delivered at the national capital shortly after daybreak Monday. Theodore Roosevelt, then President, was breakfasting when the two arrived at the White House, but he gave them immediate audience and to him the steel men explained the situation and asked whether the Government would be antagonistic to the absorption of the southern company. Gary, who was spokesman, told the President that he and his associates realized that the deal might be used as a handle to attack the Corporation for attempted monopoly—prophetic words—that they were only considering the purchase because of the strained financial situation which it would tend to alleviate, and finally that the taking over of the Tennessee properties would still leave the big company with less than a 60 per cent. control of the country's steel trade. This percentage, Gary explained, was the limit which the Corporation had set for itself and was one, incidentally, from which it was gradually receding, its percentage of the steel production of the United States having shown an almost uninterrupted decrease from year to year.

With President Roosevelt at the interview were his private Secretary, William Loeb, afterward Collector of Customs of New York, and Elihu Root, Secretary of State. The President consulted with the head of the State Department and decided that it was not in his province to give formal approval to such a transaction. He nevertheless gave

satisfactory assurance to Gary and Frick that the Federal Government would put no obstacle in the way of the completion of the transaction. These views Mr. Roosevelt later repeated in a letter to Attorney-General Bonaparte.

No sooner was Gary satisfied as to the President's attitude than he informed Morgan by long distance—a 'phone having been kept open in readiness—of the course of the interview, and the banker announced to the financial interests of New York that the Steel Corporation had arranged to purchase control of the Tennessee Coal, Iron & Railroad Co.

That memorable morning, Monday, November 4th, had dawned dark and gloomy for the financial world for which Wall Street is the nerve centre, but no sooner had Morgan's announcement become known than, as Mr. Morgan often stated, a marked change toward a more optimistic sentiment, a genuine improvement in the situation, became apparent.

Immediately on the return of the two steel directors to New York the purchase was completed, Moore & Schley turning over to the Corporation 157,700 shares of common stock of the Tennessee Coal, Iron & Railroad Co. and receiving therefor $18,774,000 in second mortgage bonds of the Corporation, it having been agreed that the stock was to be paid for at par, in bonds at a market value of 84. Other common stockholders of the Tennessee company were offered the same terms, and the Corporation has since acquired all but $68,092.50 of the outstanding common stock of the southern company; $72,500 preferred stock and $123,100 guaranteed preferred is still held outside the Corporation.

George G. Crawford, manager of the plants of the National Tube Co. at McKeesport, was appointed president of the Tennessee Coal, Iron & Railroad Co. under the new management. Crawford accepted somewhat hesitatingly at first, knowing that a great deal of money was required before it would be possible to put the company on a satisfactory earning basis. Indeed, he had previously refused to con-

sider an offer of the position of manager under the former control. Under his guidance the company did rather better than expected and by about the end of its second year as a "Steel Trust" subsidiary was showing a small profit. All earnings, however, were put back into extensions and betterments, as was also a large amount of cash supplied by the controlling Corporation, and it was not until the year 1914 that the first dividend on the common stock, 1 per cent., was declared.

By that time the expenditures made by the Corporation in extending the Tennessee properties and enhancing their earning power had begun to show visible results, and when the enormous war demand for steel started to make itself felt early in 1915, the southern company was in a position to take full advantage of it and to reap large profits therefrom.

The Corporation does not make public the operating results of its separate subsidiaries, hence it is impossible to more than guess at the probable earning power of the Tennessee company. But there is reason to believe that its future operations will justify the expenditures of the Corporation, both for purchasing and improving its plants—that the investment will prove a paying one.

CHAPTER V

MEN WHO MADE UNITED STATES STEEL

Elbert H. Gary

A YEAR or so before these words were written the big office buildings and apartment houses of New York City were tied up by a strike of elevator operators. The Empire Building, at 71 Broadway, purchased shortly before the strike by the Steel Corporation, however, was not affected. Every man was at his post. And it was perhaps the only big building in the city that showed no sign of the strike.

A newspaper man, visiting the building, asked one of the starters the reason, and he was told:

"As soon as the Corporation bought this building our wages were raised. We are getting as much as or more than the unions are demanding. Judge Gary has treated us white. And you can just bet your life we are going to stick by him, strike or no strike!"

This is only a little incident. But it serves to illustrate the most important characteristic of the head of United States Steel: His sense of justice, the supreme passion of his life. Judge Gary treats everyone "white."

Judge Gary is not a "glad hand artist." He is, if anything, too reserved, and hence he does not win popularity quickly with chance acquaintances. But those who know him intimately or have business dealings with him admire, sometimes even reverence him, for they know he not only preaches but practises in every relation of his life the square deal, and when there is any question of what is fair between himself and

another, leans over backward and gives the other the advantage.

In the pages of this history the Steel Corporation's policy of "the square deal" to all has been emphasized time and again. It is the Corporation's policy because it was first Gary's. He impressed it on the Corporation, sometimes after a hard fight. To-day it is the foremost policy of the big company as it is the guiding spirit of Gary's life.

Elbert H. Gary, chief executive officer of the United States Steel Corporation, was born on his father's farm near Wheaton, Illinois. He was descended from old New England stock on one side, his father, Erastus Gary, having sprung from the hardy Puritans who settled in Massachusetts, while his mother, Abiah Vallette Gary, was a descendant of one of the daring spirits who sailed from France as an officer in the Army of LaFayette and fought with him for the freedom of the American colonies.

The future head of the greatest industrial organization in the world was brought up frugally. He was full of spirits and fond of play, but his Puritan father was a believer in the discipline of hard work, and the youthful Elbert had little time except for his lessons and for work on the farm. "My father didn't believe much in play," he once remarked to the writer; "we boys had our choice of working or studying, and the time was divided about equally between the two during each year." But although Erastus Gary may have been stern and uncompromising he was obviously also a fond and kindly parent. Asked what had been the dominating influence of his life, Judge Gary replied: "My parents. Whatever worth while I may have done I owe to their teaching and example."

When Gary was fourteen the Civil War broke out. The story is told that the news came to the farm one evening that the Union had been attacked and Erastus Gary and his

Bee-hive Coke Ovens

Mouth of Coal Mine—Coke Ovens in Background

boys sat around the fire discussing the situation and what their course of action should be. But their mother had no such doubts. Walking to the fireplace the old lady took therefrom a rifle and handed it without a word to her eldest son.

The Judge himself remembers nothing of the incident and it may be a fabrication pure and simple. However this may be, the fact is that soon after the young Elbert ran away from home and joined the Union ranks. He never had the desired opportunity to fight for the Union as his father discovered his whereabouts—this was probably not difficult as he knew the boy's spirit—and got him sent back home.

Among the friends of the elder Gary, and frequent visitors at the Wheaton farm, were Col. Henry F. Vallette, an uncle, and Judge Hiram H. Cody, members of the Illinois bar and of the firm of Vallette and Cody, of Naperville, a neighboring town. They had both noticed Elbert Gary's ability and studious habits, and when the boy was about eighteen years of age Vallette one day asked him: "Elbert, how would you like to become a lawyer?"

Needless to say Gary did not wait to be asked twice. He entered the firm's office in 1865 and while working there began to read law. Later he took a regular course in a law school at Chicago and was soon admitted to the bar of his state, where his success was rapid and pronounced. In course of time he became Judge of Du Page County and was admitted to the bar of the Supreme Court of the United States.

Meanwhile, he had formed, with his brother Noah and one of his former chiefs, the firm of Gary, Cody & Gary.

Gary became one of the leaders of the Chicago bar, and his ability in handling difficult cases soon attracted to him a number of wealthy clients, among whom were several large corporations, and it was through his connections with one of these corporations that he eventually connected himself

exclusively with the steel industry, in which he has since risen to be the most important figure.

In 1898 Gary, as general counsel for and a director of the Illinois Steel Co., was called on to take charge of the organization of the Federal Steel Co., a merger of the Illinois and other companies. It was he who first suggested this amalgamation. Here he was for the first time brought in touch with the late J. Pierpont Morgan, whose financial assistance in the formation of the new company was being sought. The business ability of the lawyer so impressed the New York banker that he and others interested with him insisted that Gary should head Federal Steel. The future head of United States Steel hesitated, for his practice was lucrative and he had become financially independent, but he finally yielded and gave up his legal business, then located at Chicago, and moved to New York, devoting himself thenceforward entirely to steel.

Speaking of the reasons for Morgan's choice in this matter an old business associate of the Judge's said: "Legal judgment and business acumen are seldom found in combination. Gary had both these qualities and a higher degree than any man I have ever known. And it was this happy combination that impressed the great banker."

But more than this, Gary was, and is, a statesman in business. He has the broad vision that distinguishes the statesman from the mere politician and the really great business leader from the average run of executives. He saw beyond immediate effects into the distant future and based his course on this vision.

In writing of the vast majority of men who have achieved success in one line or another it is easy to select some prominent characteristic which particularly distinguishes them. But there are a few who owe their eminence to a variety of well-blended attributes, and Gary is one of these chosen few. This renders it difficult for the chronicler to decide where the heaviest stress should be laid.

A prominent Chicago lawyer who in his youth had worked for years under Gary was appealed to in this regard. And this is what he said:

"Judge Gary had the ability and courage to, whenever necessary, abandon the old precedents which, by reason of changed times and conditions, had been relegated to the scrap heap of progress. He was one of the few attorneys who could, with almost prophetic vision, see the positions which the courts of appeal must eventually be obliged to take with reference to questions of public policy and the great industrial organizations just then in their infancy."

The lawyer then went on to tell an anecdote illustrating the fact that the Judge though a member of the legal profession did not believe in recourse to litigation when it could be avoided. He said:

"I recall that on one occasion a client called on the Judge in an irate mood and asserted his intention of prosecuting a neighbor for slander. He told Gary what the neighbor had said and asked his opinion and advice. And this was the reply he received: 'If you are guilty of what he charges perhaps you had better sue; but if you are not—why, go home and forget it.'"

Nor did Gary's prophetic vision "extend only as regards the position which the courts must take" but to the trend of human events generally. There is nothing uncanny about this foresight or sixth sense. It is due entirely to the fact that its possessor has a mind peculiarly capable of estimating and sizing up the relative values of known causes and deducting from them the natural, in fact, the inevitable results.

No better exemplification of this can be given than is afforded by the policies which he advocated for the Corporation, and which were gradually adopted and put into practice. He saw plainly, long before any one else did, how subject to criticism was the gigantic organization which

he had helped to form, and of which he was the head; he realized that its very size contained an element of weakness in that it attracted enmity, and made it the subject of attack.

And in the face of powerful opposition, not only from some of his fellow directors at first—an opposition that gradually diminished and eventually vanished, or was converted into admiration and hearty coöperation—but from subordinate executives of the subsidiary companies who could not accustom themselves immediately to new business methods, he insisted that the big company should so deal with all with whom it came in contact, its competitors, its customers, its workmen, as to make all of these its friends.

Such a consummation was regarded in the beginning as an impracticable dream by nearly everyone of his colleagues, who could not realize that a new industrial era was dawning, but Gary persisted and won out.

The good will he gained for the Corporation from those who otherwise would have been its enemies proved a strong bulwark of defence in the Government's suit for the dissolution of the "Steel Trust." Had Gary's early recommendations on questions of policy been overruled by his associates it is a moral certainty that the Corporation would have been dissolved instead of emerging victorious from the suit. It is difficult to see how any one who had the opportunity to listen to or read the evidence presented in this litigation could fail to have been impressed with the fact that Gary seemed to have anticipated every possible point of attack and to have taken steps to eliminate, or at least to minimize, the danger therefrom. Whatever may have been the differences of opinion in the beginning, for many years the policies advocated by Judge Gary have been endorsed by all of his fellow-directors on the Steel Corporation's Board; particularly by the members of the Finance Committee, who were more closely associated with him, had a better opportunity

of absorbing his viewpoint, and who stood behind him solidly in carrying out his ideas. Gary himself was emphatic on this point in his testimony in the Government suit.

The part played by Gary in bringing about the formation of the U. S. Steel Corporation and in guiding its policies was clearly brought out by the late Robert Bacon, one of the partners in the firm of J. P. Morgan & Co., in his testimony in the suit in question. Mr. Bacon, speaking of the organization of the big company, said: "Judge Gary, of course, directed it all." And later, in discussing the policies of the Corporation:

"The facts are that the policy of the company from the beginning has been to change the old methods of dealing with competitors. Judge Gary, who has done more for the U. S. Steel Corporation in its development and the benefits it has brought all hands than any one man since its formation, has made it a cardinal point of his policy, and has tried his best to inculcate it upon all the sub-companies, that there was a new order of things come, that there were new rules of the game dealing with competitors, as well as in other human relations. Judge Gary has talked from the very first and has tried to compel the actions of all the others in the Corporation toward dealing fairly and decently with competitors, as being the only way in which any kind of stability of prices or of conditions could be maintained. He has from the beginning preached and practised the fairest kind of dealing with his competitors, keeping them informed, as far as he legitimately could, of all the conditions of the Steel Corporation, and by doing so has gradually acquired a degree of confidence that, in my opinion, has never existed before amongst competitors. The old conditions have changed; the old destructive and ruinous and ruthless warfare of the early days of the iron and steel industry has disappeared, and in its place, by reason of the attitude of Judge Gary, more than any one else, a condition has been produced among competitors in the iron and

steel business, and I believe in many other industries, that never before existed."

Judge Gary's intense desire for doing justice to all, and his sincere interest in the well-being of the worker, have already been referred to. He is not a reformer in the ordinarily accepted sense of the term. He does not prate about helping the working man, but in guiding the big Corporation he has always seen to it that the man who labors shall be given an opportunity for clean living and self-respect. And it is significant that in arranging wage increases the Corporation has always provided more generously for the lower-paid employee. As a mass, the men who work for the Corporation recognize Judge Gary's attitude and appreciate it fully. And he sets a higher valuation on this recognition and appreciation than on all the honors that have come to him.

Some years ago Gary, in urging on the subsidiary companies the promotion of safety and welfare work for the Corporation's employees, said to the casualty managers of the different subsidiary companies: "We (the Finance Committee) shall not hesitate to make the necessary appropriations of money to carry into effect every suggestion that seems to be practicable for the improvement of conditions at our mills." Later he wrote, repeating his former promise that all needed money would be forthcoming and saying: "The safety and welfare of the workmen is of the greatest concern."

This promise has been kept sacredly. The writer has visited at one time or another practically all the Corporation's plants—some of them several times. At each one he has always asked those who devote themselves to welfare work this question: "Have you any difficulty in getting appropriations from the Corporation for welfare work you consider advisable?" And the reply has invariably been the same: "We are never refused."

In the vast organization that is the United States Steel

Corporation there are perhaps hundreds of thousands of men who have never set eyes upon its head, who have no idea what he is like to look upon. But there is probably hardly a man who does not feel his influence, and there are few who do not look up to him with respect and often with something like reverence. His personality has permeated this huge mass of men.

Another attribute of this great business leader is a broad and real tolerance of the opinions of those who do not agree with him. He has built up a vast and wonderfully efficient organization founded on what he conceives to be principles of justice and fair dealing, but his attitude toward those who criticize the structure he has erected is not one of irritation, as might be expected, or of impatience. Rather he endeavors, sincerely and patiently, to disarm criticism by a policy of open dealing.

On one occasion, when certain acts of his had been criticized as constituting a possible violation of the law, he, although believing implicitly that he had not offended, forthwith abandoned the continuance of these acts, so as to leave no shadow of doubt of his intent to obey the law. He explained at the time that though every citizen had the right to criticize legislation, and should seek to have changed such laws as he deemed unjust or uneconomic, he was bound to obey these laws so long as they remained on the statute books.

In physical stature Judge Gary is of medium height. He carries his years well and appears yet in his prime. The impression he gives the observer is that of a statesman rather than a man of affairs, an impression heightened by his deliberate speech and his appreciation of the finer meanings of words. Most of his portraits represent him sitting straight up, just a little stiffly, but when interested in a conversation, the Judge invariably stands, or rather paces deliberately back and forth, his hands stuck in the waistband of his trousers, and his head bent forward at an angle of deep

thought. And as he warms to his subject, he now and then gesticulates slightly, or, turning to his listener, drives home some argument with pointed forefinger. At the remembrance of some amusing incident his twinkling eyes light up what is usually a decidedly serious countenance.

All those who during the World War were in touch with what was being done by the Government to meet the enormous new manufacturing needs created by the war know that the Steel Corporation, in the great emergency, invariably put patriotism above profits and that its hearty coöperation helped materially in bringing about the desired end. Judge Gary was responsible for the Corporation's attitude in this as in other matters.

Honors have been showered upon the head of the Steel Corporation by universities and colleges, and the American, French, Belgian, and Italian governments, and the late Pope Pius X presented a gold medal containing his profile portrait to Judge Gary in recognition of his efforts for improving working conditions. But beyond all these honors he values the esteem of the men under him, and the good will of his competitors.

It would be hard to find a more suitable ending for this brief study of the leading figure in the industrial world than the quotation applied to him by the principal steel makers of the United States and Canada on the occasion of a dinner given in his honor in October, 1909. Here were men who had fought with him and against him, who had had every opportunity to estimate him both as friend and foe, and who, after the trying times of the 1907 panic, declared that he had "played the game and played it fair":

"Moderate, resolute, whole in himself, a common good."

John Pierpont Morgan

"The greatest banker the world has ever seen." Thus the head of the Deutsche Bank called the late J. P. Morgan

during his lifetime, and as the years pass students of finance are becoming more and more satisfied that the German, himself a banker of no mean repute or ability, spoke truly.

Without J. Pierpont Morgan the organization of the United States Steel Corporation would, in all probability, have been an impossibility. The carrying through of so vast a project required a financier of his prestige and of his financial courage. There was no other banker big enough or bold enough to undertake such a task, and no history of the Corporation would be complete unless it contained a résumé of the work of the former money wizard.

So large did Morgan loom in the public eye during his lifetime and so much has been said and written of him since that it would be difficult to say anything of him with which the reader is not already familiar. But it has perhaps not been generally realized that Morgan was a patriot of the right type. He was, to use a financial term, "a bull on America." His confidence in his country's future was unbounded, and he had the courage of his convictions to put his great fortune into the development of American enterprises.

John Pierpont Morgan was the son of Junius Spencer and Juliet Morgan. He was born on April 17, 1837, and educated at the English High School of Boston and the University of Gottingen. He entered the banking business at the age of twenty, with the firm of Duncan, Sherman & Co., and later, from 1864 to 1871, was a member of the banking house of Dabney, Morgan & Co. Still later he helped to form the firm of Morgan, Drexel & Co., which afterward became J. P. Morgan & Co. He died in Rome within a few weeks of the close of his 76th year, on March 31, 1913.

Having a peculiar genius for financial organization and arriving at the heyday of his power at the period when vast consolidations of capital and industry were the order of the day it was natural that he should have figured prominently

in the carrying through of many of these. Among the large concerns with the organization of which he was closely identified was the International Harvester Co., and he took a prominent part in the reorganization and refinancing of several large railroad enterprises, notably the Erie, Reading, Santa Fe, and Northern Pacific. He has generally been blamed for the New Haven débâcle and there is no doubt that he occupied an important position in managing its affairs; in fact, according to the former president of that system, he dictated its policies and actions.

But the financing of the United States Steel Corporation was beyond all question his *magnum opus*.

So great was Morgan's influence in the management of most of the companies with which he was connected that it was said of him, as of the McGregor, that "where he sat was the head of the table."

But so far as the Steel Corporation was concerned at least, it seems to be fairly well established that, keen as was his interest and great as was his pride in the big company, he never assumed an attitude in the least dictatorial. He was the Corporation's banker—nothing more. Questions of operation and policy he left entirely to those having direct charge of them. This was particularly true in the last six or eight years of his life, by which time, other directors of the Corporation have stated, he had come to place such implicit reliance on the judgment of Judge Gary that he always accepted the latter's ideas upon all matters connected with the welfare of the great enterprise.

Morgan himself regarded the amalgamation of many of the country's leading steel concerns into United States Steel as the crowning achievement of his career. He took a personal pride in his connection with the Corporation's organization—and who shall say it was not a worthy pride? He lived to see it firmly established and exerting an influence for good on the steel trade and on industry generally; to see it gain the con-

fidence of the public as evidenced by the growth that was, even before his death, taking place in the number of its stockholders, many of whom held only a share or two and regarded them almost as gold bonds; to see it earn the good will of its competitors and the loyalty of its—at the time—two hundred thousand odd employees.

But unfortunately he also lived to see it attacked by the Government. No doubt this was a sore grief to the great financier. And its vindication did not come until several years after his death.

To those who knew him by sight only Morgan appeared a solitary, stern figure, perhaps a little too much inclined toward impressing his own will on others. Those who enjoyed intimacy with him declare that under his cold exterior beat a heart as tender as a woman's, that he took the keenest interest in all things human and that, while never figuring publicly as a philanthropist, the list of his private benefactions was enormous.

Newspaper men, who perforce had often to seek an interview with the great banker, found him rather unapproachable. But when he consented to talk his statements could be relied on absolutely. And he was not without a subtle sense of humor. On one occasion a financial writer who had been assigned to get Morgan to talk by hook or by crook invaded his private yacht and was only saved from being ejected by the banker himself who invited his visitor to the saloon and treated him like an honored guest.

He discussed in the fullest detail the subject on which the writer wished to interview him but—at the end, when his self-invited guest was taking his leave, Morgan said with a shadow of a smile:

"Of course, you understand all I have told you is in confidence. You have been my guest and I rely on you not to violate that confidence."

Needless to say the interview was never printed. The

scribe reported to his office that the banker refused to be interviewed.

When Morgan died the leading business men of the country united in testifying to his ability and character. Judge Gary, who had been closely associated with him for years, said:

"As a constructive force in financial matters he had no equal. With keenest perception, with indomitable courage, and with unbounded confidence in the future he was a natural leader and as such was called upon in times of financial stress to lend his influence to avert a threatened storm or to overcome an existing difficulty. And he never failed. His character was such that the greatest men of this country and of other countries trusted him and followed his lead."

Shortly before he last sailed from his home shores Morgan remarked to a friend that his work was done. The utterance was prophetic. And posterity is beginning to realize how great that work was. In these difficult days of world reconstruction, more than ever before, is his financial genius and particularly his faith and courage missed.

Charles M. Schwab

Perhaps of no other man in industry are as many anecdotes related as of Charles M. Schwab, the first president of the United States Steel Corporation, and now head of the Bethlehem Steel Corporation, the second largest steel organization in America.

Schwab is the Peter Pan of American industry. His is the spirit of perennial youth, his the philosophy of laughter.

"I try," he says, "to be like Schulz. He was a foreman under me during the Homestead strike. He stuck by the company and one day came into my office dripping mud and water. To my inquiries he replied that some strikers had thrown him into the creek.

"'What did you do then, Schulz?' I asked.

"'Oh, I shust laff.'"

One of the old Carnegie "boys," Schwab is like the former iron master in his wonderful ability to infuse into those who work with him some of the enthusiasm with which he is so richly endowed, and to get from them loyalty and devotion. To this attribute, as much as to anything else, Schwab owes his great success.

It is impossible to get an accurate concept of Schwab's personality without coming directly into contact with him. Many men have declared that "C. M.," as he is known to his friends, is "the best salesman that ever stepped in shoe leather." And this is not an exaggeration. There is something about him—fascination, personal magnetism, call it what you will—that captivates almost everyone with whom he comes in contact. His infectious laugh disarms hostility and criticism. His great ability compels admiration.

Numerous anecdotes illustrating Schwab's magnetism are told in the steel trade; the following is typical:

Several years ago, when Bethlehem Steel was a little known company, its head visited a prominent New York banker to seek his aid in putting out a bond issue. He told the banker all about the great future in store for Bethlehem as he saw it—prophetically, as it has turned out—and his hearer was fired with enthusiasm regarding the proposed issue. He asked Schwab to go back to his office and dictate to a stenographer the statements he had made regarding the security behind the bonds and the future of Bethlehem Steel for the purpose of making up a prospectus. With that, he declared, the bonds would sell like hot cakes.

When the banker received the typewritten prospectus he was dissatisfied and rang Schwab up on the 'phone. The steel man's arguments were not nearly so convincing in black and white as when given in his inimitable style, and the money magnate declared that the other had not included in the

written statement the facts related in the conversation. So Schwab paid him another visit and went all over the matter again. The banker said:

"Yes. You've got it all down here. But it doesn't sound the same. I tell you what we'll do. You talk the bonds into a phonograph and we'll use the records to sell them."

And here is another Schwab anecdote told by himself:

"On one occasion, when Bethlehem was still a struggling company, I went to see a Philadelphia banker whom I knew very well and told him I needed a great deal of money. He said:

"'I can let you have half a million.'

"'Why,' I replied, 'I can get at least a million from bankers in New York who don't even know me!'

"'That's the reason they lend you,' he gravely returned."

Charles M. Schwab was born at Williamsburg, Pa., on February 18, 1862, and educated at St. Francis College at Loretto in the same state. His father owned a livery stable at Cresson Springs, where Carnegie had a summer bungalow.

One day the little Scotsman, who loved music, heard the boy singing, and told Schwab, Senior, to bring the lad to him when he was ready to go to work. At the age of eighteen Schwab entered the employment of the Carnegie Company as a junior in the drafting room.

Schwab attributes his success largely to the interest which Carnegie took in him. Carnegie, on the other hand, declared that Schwab was one of the two men to whom he owed the bulk of his fortune, the other being Captain William R. Jones, who was superintendent of the big Braddock plant when Schwab enlisted in the steel army.

At the age of twenty-four Schwab was appointed superintendent of the Homestead plant, which had just been acquired by Carnegie. When he arrived there, the organization was in a terrible condition. The long series of strikes which the original owners had had to contend with had not

only caused them to give up the plant in despair and to accept Carnegie's offer, but had resulted in bitter feeling on the part of the workmen. But Schwab's smile and good nature soon won them over, and in a few months the organization had been restored and Homestead was making money for Carnegie.

In 1889 Schwab returned to Braddock on the death of Captain Jones, as his successor. Three years later occurred the bloody strike at Homestead, and Schwab was again sent back there to take charge. When the strike was over he was put in charge of both plants. He was the only man that ever managed two plants for Carnegie.

One day Carnegie told Schwab that it had been decided to make him vice-president of the Carnegie Company. But the young man replied:

"No, Mr. Carnegie, I am no good at carrying out another man's orders, and that's about all a vice-president has to do. As superintendent I am boss of the plants I manage; I prefer to remain that way."

Next day Carnegie again sought out his superintendent. "Well, if you won't be vice-president, I suppose we'll have to make you president," he said, and so he did.

Like Gary, Schwab was satisfied that the next step in steel making, one that must come sooner or later, was the integration of the different departments of steel making into one big, harmonious whole. How he assisted in making this possible we have already seen. In 1901, on the organization of the United States Steel Corporation, Schwab became its president, with a salary of $100,000 a year and about $15,000,000 of its stock.

After the Corporation had taken over Carnegie Steel, Morgan, the story goes, found a contract among its papers pledging Schwab a salary of $1,000,000 a year. He had not been aware of the existence of this contract and asked Schwab what could be arranged on the matter. Schwab

replied: "Let me have that paper a second, Mr. Morgan," and taking it from the banker, he tore it into small pieces and threw them into the wastebasket.

But Schwab did not long remain president of the great steel merger. Long accustomed to being "boss" he found the new conditions disagreeable. Bred in the old steel school he was out of sympathy with the policies of the Corporation as inaugurated by Gary. There was no open breach between them, but the situation was obviously galling to the younger man and so he resigned, his resignation probably being hastened by the fact that he had been for some time in poor health, a victim of neuritis.

It was in 1903 that Schwab severed his connection with the Steel Corporation and sailed for Europe intending, at the time, to give up business permanently. But this was not to be.

Although he returned from Europe in 1904 Schwab did not actively engage in business again until 1907. He was, in a sense, pitchforked back into the manufacturing arena by the failure of the United States Shipbuilding Co. a year or two before and its reorganization as the Bethlehem Steel Corporation. Schwab, who had been the principal bondholder of the shipbuilding company, became the controlling interest in the reorganization and eventually assumed personal charge of its activities to protect his own investment as well as that of others.

Once in harness again Schwab threw himself heart and soul into the steel battle. He found Bethlehem Steel in a run-down condition and for years he poured into it his personal fortune and all the money he could borrow. Although himself the largest stockholder he steadfastly refused to consider dividends until the company was firmly established financially and the result was that, before the European war broke out, Bethlehem was solidly on its feet and showing large earnings. These were enormously enhanced during the war

years, when the stock sold as high as $700 a share. To-day Bethlehem is the second biggest steel company in the world, its plants having a capacity of 3,250,000 tons of steel annually.

Although for many years a competitor of the Corporation of which he was once president Schwab is still a firm believer in the future of United States Steel and the value of its securities. On one occasion he told the writer:

"It is a wonderful concern. There isn't anything like it in the world, nor could its plants and organization be duplicated at any cost. The future will show how well, how securely, its foundations were laid."

George W. Perkins

George Walbridge Perkins, chairman of the Finance Committee of the United States Steel Corporation from November, 1901, to February, 1907, and an active member of that committee and of the Corporation's directorate till the day of his death, June 18, 1920, was an unusual figure in American business—a man who, working his way from the bottom of the ladder to an eminent position while still comparatively young, gave up active money making while still under fifty and devoted his life to the betterment of social conditions.

The world does not know how to judge Perkins. There are many who believed that his withdrawal from active business and his self-submergence in social work was a cloak, and this belief was undoubtedly strengthened by the fact that Perkins, in appearance, was a typical, cold-blooded financier. His was neither the look nor the manner of an idealist, a reformer. But the record of his life from 1911, when he resigned from a partnership in the great House of Morgan, is ample answer to all doubts of his sincerity. Perkins' friends and admirers can point with confidence to this record in the impartial court of history.

Perkins was born at Chicago in January, 1862. He began his business career in the humblest capacity, that of office boy, in the branch of the New York Life Insurance Co. in his home town. Later he became bookkeeper, then solicitor, manager of agencies and, still later, vice-president. Finally, when only thirty-eight, he was elected chairman of the Finance Committee of the company.

Perkins was one of the first exponents of corporate publicity. He saw its virtues when publicity to most corporation men was anathema. When vice-president of New York Life he urged that the best way to earn the confidence of the public was to give it your own, and he prevailed upon the trustess of the New York Life to publish annually a full list of the securities in which the policyholders' money was invested. This innovation was heralded with a storm of ridicule by the managements of competing concerns. But so powerful a means of getting new business did these security lists prove, so great was the increase of insurance written by the agents armed with them, that other insurance companies were soon forced to follow, and the practice became general in the insurance world.

Perkins' next step was to extend the business of his company to European fields previously closed to all American insurance concerns, which, in fact, were not permitted to operate in many European countries because of the unenviable reputation they bore. Perkins was determined that New York Life should lift these legislative handicaps and do business anywhere and everywhere it wanted to and so he made one trip after the other to Europe, each time extending his company's field of operations. What he said in effect to the various European governments was: "The New York Life is ready to meet any reasonable demand for the safeguarding of the interests of its policyholders," and he backed up his assertion. The result was not only to give the company a bigger field abroad but to strengthen the arguments of its agents at home.

This achievement and the fact that he was instrumental in bringing to America the first Russian loan ever placed here, brought Perkins to the notice of New York financiers. Early in 1901 he called on the elder Morgan seeking a subscription to the Palisades Park project, one of Perkins' pet hobbies until the day of his death and a project that has enabled thousands of poor children from the New York slums to get a chance for fresh air and outdoor enjoyment. Morgan, on his second meeting with the insurance man, pointed in his usual abrupt manner to a desk near his own:

"How would you like to occupy that?" he asked.

At first Perkins refused, but later accepted, and he became a partner in Morgan's in 1901, continuing with the great banking house until 1911.

Soon after the Steel Corporation was organized Perkins was elected a member of the Board of Directors, and later, on the resignation of Robert Bacon, became chairman of the Finance Committee. His experience with the New York Life had peculiarly fitted him for the position he now held, for Perkins was first and last an organizer—a worker with men, not with money. Although a member of the largest private banking house of the country he was not a banker. "In the ten years I was with Morgan's I never went behind the counter or examined into the bookkeeping end of the business," he declared; "my job was to assist in the physical organization of the great industrial combines which Mr. Morgan was then engaged in financing."

Like Gary, head of the Steel Corporation, Perkins looked rather to the ultimate results of an action or a policy than to its immediate effects. Like Gary, moreover, he was a believer in corporation publicity and in the square deal to the worker, so it was natural that he should have favored these ideas in the Corporation. Perkins at the beginning, it is true, did not fully endorse all Gary's policies but he early became an ardent supporter of them, and his assistance in the turbu-

lent early years was a great help to the Judge in his efforts to have his policies endorsed by the Corporation's board.

Perkins was particularly identified with the Corporation's bond conversion plan, explained in an earlier chapter. It was largely his idea. When the subject of raising more working capital came up after the organization of the big company it was he who suggested the scheme by which the cost of securing the new capital needed would be paid back in a few years by savings in interest charges, one which would also eventually reduce the Corporation's fixed charges materially. He believed that the Corporation should build for the future and that it was a matter of small moment if the immediate cost of a course of action was high if the ultimate results were toward economy. And when the plan was opposed in the courts by some of the stockholders it was an affidavit presented by Perkins that did more than anything else to induce a favorable decision and to make it possible to proceed with the conversion.

In 1911 Perkins retired from the Morgan firm, at the same time retiring from all active business except his directorship in various companies, chief among which were the Steel Corporation and the International Harvester Co., of which latter he was chairman of the Finance Committee. After that time he devoted his energies until his death to semi-public work.

Especially did he devote himself to the solution of the problems growing out of the relationship between capital and labor. He was prominent in the profit-sharing plan which is now in vogue in the Steel Corporation and which has been so largely followed by many other industrial concerns in the past seventeen years. He also gave much of his time to spreading the gospel of coöperation in the business world. As long ago as February, 1908, he began making public addresses on the necessity for such coöperation, claiming that the many modern improvements in inter-communica-

tion and the enlightenment of the people through our broad system of education had brought us to a point where the old destructive, competitive methods in business had to be abandoned and a more humane and enlightened order of things take their place. He delivered many addresses throughout the country on these two favorite themes, profit-sharing and coöperation.

As already suggested Perkins' course in breaking off his business career apparently at its zenith and devoting the prime of his life to the betterment of the lot of the worker with his hands and the general welfare of the community was regarded with suspicion by many, and his motives were questioned. Of the influence that guided his course let him speak for himself.

"My father," he said, "was deeply interested in social service and settlement work, and, as a boy, my Sundays were spent not in merely going to Sunday-school but in rounding up the poor boys of the neighborhood for classes, etc. Later, my experience selling life insurance brought me closely in touch with the needs of the people, and even when I became affiliated with the Morgan firm my work as an organizer was the human end of the job. My inheritance from my father and my own life work both kept me in touch with "all things human." Isn't it only natural that I should take a deep interest in what you might call human work?

"I don't claim credit for this. In fact, I don't see how, with my experience, it could have been otherwise. It became, if you will, my hobby which I gratified as soon as I was able to.

"When a man approaches fifty years of age and finds he has enough money to meet his wants for the rest of his life and to take care of those for whom he should naturally provide, the question that presents itself is: what am I going to do with the remainder of my life? Whatever I do in the way of work will have to be left behind me in the world. Shall I

work to accumulate more money and leave that, or shall I work for certain definite objects that I believe are worth while, and leave the results of that work behind me? I simply chose the latter course."

Other "Men of the Corporation"

Many other men, of course, have done their share in making the Corporation what it is to-day. In the success of the great company men like Richard Trimble, its secretary, and William J. Filbert, its comptroller, who have been with it since incorporation and seem almost as integral parts of its structure as Judge Gary himself, have done their part, as have the presidents of the various subsidiary companies. All these are men of unusually high ability, nearly all of whom have worked their way to their present positions from the bottom of the ladder. They have for years devoted all their energies to building up, each in his own sphere, the business and resources of the big company and may justly and proudly claim the right to be reckoned with Gary, Morgan, and the others, as "Men who made United States Steel."

CHAPTER VI

DEVELOPING WORLD MARKETS

UNTIL the year 1914 American industry had been self-sufficient. Our manufacturers made goods for home consumption, our bankers concerned themselves only, or almost so, with American finance, and, broadly speaking, the world outside was of comparatively small importance in our business affairs. With the war this situation changed. The British navy stood as an impassable barrier between Germany and her customers abroad. England and France were devoting the mass of their man power to fighting or the production of the wherewithal for fighting, and the neutral, non-producing nations had only one market to turn to. They came to the United States for all their wants of manufactured goods, and in so doing brought home to the American manufacturer the real importance of these vast markets he had previously neglected.

Some of our more far-sighted manufacturers, however, had long sensed the value of this foreign commerce. They realized that the day would come, sooner or later, when this country would produce a surplus of manufactured goods above her own needs, and that if she was to be prosperous she must find customers outside for this over-production. They realized, too, that these markets must be assiduously cultivated against the time when they would be necessary for the continuation of our prosperity.

And among those who took this far-sighted view was the management of the United States Steel Corporation.

In the office of James A. Farrell, president of the Corpo-

ration, at 71 Broadway, New York, stands a pedestal supporting a great globe. It is a fitting ornament for that office, for the business of the great steel company extends to practically every part of the known world, literally "from China to Peru"; fitting, also, because Farrell's name is indissolubly connected with the development and extension of that business in the markets of the world.

When the idea of a big steel combine was first conceived by Judge Gary, one of the chief considerations in his mind was that such a vast organization, and such an organization alone, would be able to offer battle to the manufacturers of the other great steel-producing nations—Great Britain, Germany, and Belgium—which were then practically without let or hindrance, dividing between them the markets of the world. The same thought was forcibly brought out by Charles M. Schwab at the Simmons dinner, and was one of the most powerful factors in influencing J. Pierpont Morgan to undertake the financing of the giant steel merger.

Properly speaking, the development of the Corporation's export trade did not begin until about two years after the big company was formed. Questions of internal organization were naturally paramount in the Corporation's infancy, and the first few years were taken up with problems nearer home—physical organization, coördination, integration, efficiency, economies, in a word, the welding into a harmonious whole of the corporate organization and properties merged. Therefore, it was not until the early part of 1903, when internal problems had been gotten out of the way, that the question of securing export business on a more systematic and profitable basis was actively considered and steps taken toward the formation of an organization with a definite export plan and policy. To do this, it was necessary to bring together, to consolidate, the export offices and organizations of the several subsidiary companies which had until that time been maintained on a practically independent

basis. This was done by creating a new company, the United States Steel Products Export Co. (the "Export" was later dropped from the title), late in 1903. The first organized efforts of the Corporation to obtain export business may thus be said to have begun with the calendar year 1904.

How beneficial was the coördination of the export trade of the various constituent companies into one selling agency is forcibly illustrated by the fact that the cost of doing export business has been reduced from about 8 per cent. of gross, which it was when each company sold independently, to something under 1 per cent. in recent years. As the Corporation's foreign sales in the past few years have averaged more than $160,000,000, this has meant an annual saving of between $11,000,000 and $12,000,000, or nearly a half year's dividends on its preferred stock. The lower selling cost also meant that the position of the Corporation bidding against foreign competition has been improved, and to that factor must be attributed largely the increase in the Corporation's export business.

The choice for the presidency of a new export organization fell upon James A. Farrell. He was suggested and his appointment advocated by the chairman. He was the man fitted preëminently for the job and his selection was more or less inevitable. It is generally recognized that no individual in the steel industry possessed so wide a knowledge of the extent, character, and requirements of world markets as he does. In 1903, when he became president of the Corporation's new export subsidiary, the country's foreign trade in iron and steel was a little more than 300,000 tons. In 1917 it was 6,268,514 tons.

For many years, during which there had been little disposition on the part of American steel makers seriously to cultivate markets abroad, Farrell's entire time and energy had been devoted to that end. A man with the genius that is "an infinite capacity for taking pains," he had developed

a thorough knowledge of competitive conditions affecting steel in every part of the world where the metal was used. He had become, and still is, a walking encyclopedia on all matters relating to the exportation of steel, carrying in his head details of freight rates, steamship facilities, duties, and so on, at and between all important and many unimportant points. His facility in reeling off from memory these facts and figures, as displayed when he was called as a witness for the defence in the Federal suit since dismissed by the Supreme Court for the dissolution of the Steel Corporation, earned him the soubriquet of "the man with a head full of figures," a not inept title.

And indeed, no more striking exposition of the wide scope of the export market for steel made in America which has been developed within the past sixteen years has ever been given than was embraced in his testimony on the occasion mentioned. His statement which, incidentally, consumed nine days, was a remarkable story of business achievement. He showed that the exports of the Corporation were of a variety as miscellaneously wide as was their distribution, ranging from cotton ties for Egypt to highway bridges for Iceland; from wire products for the Holy Land to light rails and pipes for the diamond mines of the Transvaal; from galvanized sheets for the houses of the Borneo natives to the steel skeleton work for some of Buenos Aires' large and beautiful buildings; in fact, everything made of steel was shipped "from Greenland's icy mountains to India's coral strand."

Farrell is one of the men of which the steel trade furnishes so many examples, men who have worked their way up from the foot of the ladder to the highest places in the industrial and commercial world. Born at New Haven, Conn., on February 15, 1863, he started his working career as a laborer in a wire mill in his home town while yet in his teens—at the age of fifteen and a half. But it was not long before

he was doing skilled work, and from this it was, for Farrell, an easy step to a more responsible position.

While he had made good in the shops Farrell's ability ran rather to the selling than to the manufacturing end of the industry. He was a merchant, a salesman, above all things, and he was soon given an opportunity to prove his ability in this line when he was sent on the road for the Pittsburgh Wire Co., with which concern he had become connected. Later, when that company was absorbed by the American Steel & Wire Co., Farrell won his way to the sales managership. His success there was pronounced, and when the company decided to enter the foreign field, he was offered, and accepted, leadership in the new venture. When the Steel Corporation later took over the American Steel & Wire Co., Farrell acted as foreign sales agent for the big merger, and finally, as already stated, became the first president of the Steel Products Co.

How satisfactorily he filled this position was shown by his selection by Judge Gary later as president of the parent corporation. Farrell's elevation to the presidency of the United States Steel Corporation took place in January, 1911.

Farrell deserves to be reckoned, along with Gary, Morgan, Perkins, and Schwab, as one of "the men who made United States Steel." Although occupying a comparatively unimportant position at the time of the birth of the Corporation his connection with it has lasted throughout its history and for the past ten years he has had general oversight of the manufacturing and selling operations.

Although no longer in direct charge of the management of the Steel Products Co., Farrell still takes a keen and personal interest in all that concerns the structure of the foreign business which he helped so materially to erect. He is in close and constant touch with all its export activities, and keeps himself as thoroughly informed on developments affecting

world trade in steel as he did when his whole time was devoted to that end of the business.

Quiet and unassuming, Farrell bears a name for thoroughness and efficiency. He throws himself wholeheartedly into his work, giving it absolute loyalty and untiring energy. He was at one time characterized as "the man who never rested" and there was some reason for the characterization. In times of stress his working day is fourteen hours or longer. But he has a splendid physique and a constitution apparently of the steel in which he deals.

At first glance Farrell impresses the observer as "pure business." His manner suggests impatience of waste of time or language, and he seldom makes even an unnecessary gesture. In appearance he typifies the cold, unsentimental, even hard, business man. But his looks do him an injustice for he is, if one is fortunate enough to pierce beneath the surface, a man of broad sympathies and rare delicacy and tact.

Farrell was succeeded as head of the Steel Products Co. by Eugene P. Thomas, who since 1906 had assisted him in building up that company's world business. Thomas was born in Atlanta, Ga., on May 11, 1876. He began as a newspaperman, but after a brief experience in that profession entered the steel trade. He was one of the pioneers of foreign trade in steel, having gone to England as a salesman for the company with which he was then connected, Lorain Steel, in 1899. Before he had attained his thirty-fifth year he was head of the greatest export organization in the United States.

As already explained, American steel manufacturers had made little systematic or sustained effort to capture foreign trade prior to the organization of United States Steel. Such campaigns for world business as had been undertaken had not been conducted, as a rule, in such a manner as to give the steel maker of this country a good name abroad. The people of the steel-consuming countries—as distinct from

those producing their own steel—preferred to deal with German, British, or Belgian mills, and for obvious reasons.

The great steel-producing countries of the old world, under normal peace conditions, are unable to consume more than a comparatively small proportion of the output of their mills; internal or home consumption is small. Hence, the exportation of the greater part of the steel these countries make is a pressing necessity and no effort is spared to secure foreign outlets for their product, to cultivate a world-wide good will.

The steel maker of the United States, on the other hand, has always had, except in times of severe depression, an excellent market at home, one ready to hand and able to absorb all the steel he turned out. The country had been building up and expanding. Steel has been and is still needed for railroads, skyscrapers, bridges, factory buildings, agricultural machinery, automobiles, and a thousand and one other purposes. The result of this has been that our manufacturers have had no particular desire in normal times to seek foreign business with its attendant risks and expenses and the long-term credit it demands. They were, until recent years, content to leave the foreign markets to European exploitation and only to enter these markets when dull business at home forced them to seek new outlets for their product. In the earlier days of the industry American steel, at such periods, was thrown on foreign markets at prices often below cost of production, the loss being considered preferable to unemployment at home or the disruption of company organizations which a continuous decline in sales would have brought about. This process was commonly known as "dumping," and it was calculated to earn the bitter hostility of foreign competitors who saw their carefully cultivated markets taken away from them by cut-throat competition. A wave of returning prosperity at home would cause indifference to, and independence of, foreign trade on the part

of our steel producers, an attitude that naturally did not create good will among foreign consumers. One of the results of this state of affairs was uneven and sporadic exports; another was that American steel had no friends abroad.

It has often been charged against our manufacturers that, although professing to be anxious to sell their goods in all markets, they were unwilling to meet the requirements of the foreign buyer, taking the "if they don't like our goods, let them go elsewhere" attitude. Fortunately, this is not nearly so much the case to-day as it was a few brief years ago, but this disposition is still visible in many quarters. And it gives the European competitor, who goes on the principle that the buyer is always in the right, an incalculable advantage. The basis for this attitude on the part of our manufacturers lies in his assurance of vast home markets. His competitor abroad, having perforce to sell half or more of his output in other than home markets, naturally works to find out the needs of possible buyers everywhere, and sets out to meet these needs. And he gets the business.

But the Steel Corporation, once having determined to build up a permanent export business, accepted and adopted the attitude of its European competitors that the consumer, no matter where he is, must get his goods as he wants them, and not as the manufacturer sees fit to make them. To do this, it became necessary to begin to manufacture a number of new lines of steel for which there was no call in the domestic markets, to adopt the weights and measures of each country in dealings with buyers there, and in every way to make it convenient for the purchaser abroad to order from the Corporation with the certainty that his business would get the same welcome as it would if placed with a British, German, or Belgian mill, and the same care and attention. To suit the needs of the various foreign buyers catered to it was found necessary, in some instances, to devote entire mills to making nothing but export products.

Wire goods constitute an important item of export and of the eleven thousand and more varieties of wire products made by the American Steel & Wire Co., some 1,800 are manufactured principally for foreign trade, many of these lines not being sold in the United States at all.

For instance, the countries in South America lying below the equator demand what is known as "varnished" wire; certain of the tropical countries, because of climatic conditions, require a wire heavily coated with spelter to withstand rust; and so on. The Australian carpenter is accustomed to fasten his woodwork with a nail of oval section. No argument can convince him that the round nail, favored in America, is just as good. He knows what he wants and knows also that if the United States won't supply it, Europe will. In other parts of the world a square nail is popular. So the Corporation makes oval nails, square nails, nails, in fact, to suit every clime and country. It does not attempt to argue about tastes, it merely accepts them as they are and endeavors to satisfy them—and this is the royal road to sales and profits.

Even in the question of packing, local usage must be considered. In the United States, the standard package for nails is the 100 lb. keg. For the Japanese trade, picul kegs, holding approximately 133 lbs., are demanded, while the Hindu trader, sitting bare legged and beturbaned before his booth in the bazaars of Bombay or Calcutta, offers the passer-by small packages of nails weighing seven pounds—put up by the American Steel & Wire Co.

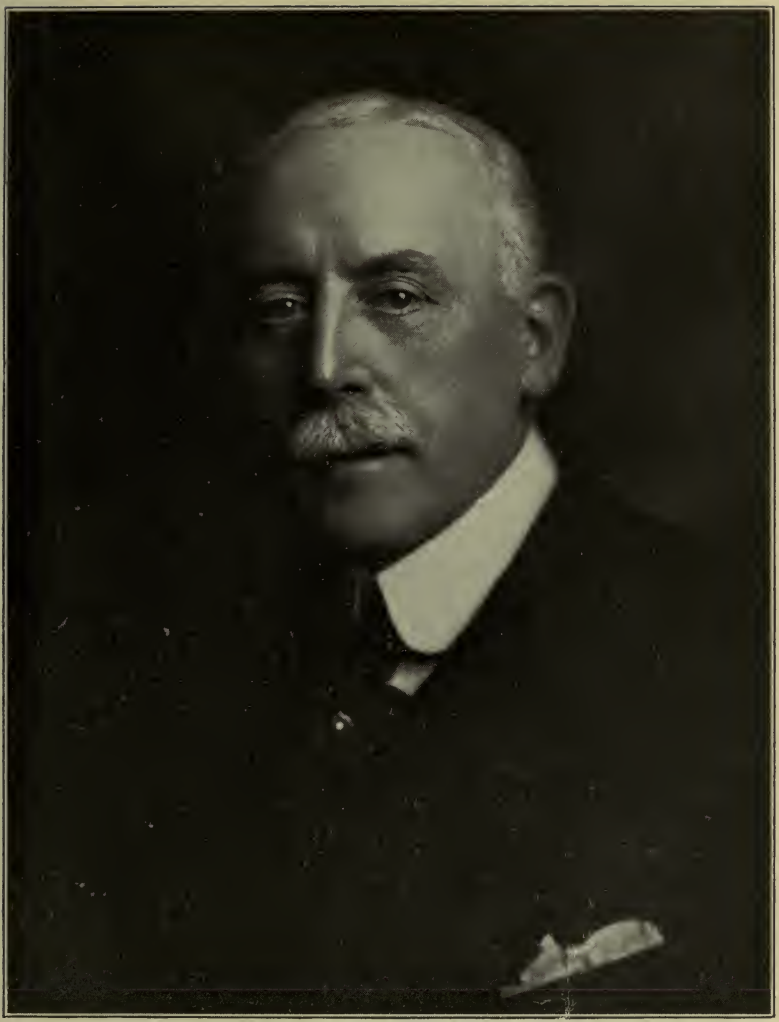
It was a big job that Farrell had handed to him when he was put in charge of the exploitation of foreign markets for the Steel Corporation. For not only did the varying conditions affecting sales in the different parts of the world have to be studied and plans laid to adopt manufacturing methods to meet these conditions, but there were other obstacles to contend with, handicaps, by the way, which it would hardly

have been possible to overcome without the backing of the power and prestige of the greatest of corporations.

One was the question of prices. The high wages paid to American labor as compared with labor compensation in Great Britain, Germany, or Belgium, combined with the fact that these countries lent every assistance to their manufacturers in increasing their world business—particularly Germany, which encouraged the artificial keeping up of home prices and the reduction of export prices, with the object of extending the nation's foreign commerce—rendered it impossible for American manufacturers to obtain as profitable a price in competition with Europe as they did in the domestic field. Further, as the Corporation entered many markets to find foreign competitors already firmly established therein, it was necessary to offer buyers material price concessions to get business at all in the first place.

Such price cuts were nearly always essential to give the Steel Products Company its first foothold in the desired markets, to force the entering wedge. The fact that the Corporation has at times sold abroad cheaper than at home has been used as a weapon against it by its critics. Apart from the fact that its doing so afforded labor to many American workers and thus reduced unemployment, it seems plain that a seller must make his price to suit the market in which he is operating, that had such price concessions not been made the Steel Corporation's export business would never have shown the remarkable growth it has. Europe would have undersold it in all markets. However, the Corporation refused to follow anything like the old dumping policy, often refusing otherwise very desirable business on the single issue of price.

Besides the preference, natural on the part of the buyers, for well-known and long-established goods and the close connection of foreign manufacturers antagonistic to a new competitor in the field, the Corporation had other difficulties to overcome. These included banking facilities in the va-



James A. Farrell

Transporting 222 Tons of Bridge Material in China

rious countries opposed to business with America; cheaper freights and better steamship accommodations in foreign ports than were available from the United States; preferential duties, and so on.

For years the Steel Products Co. consistently contended against these obstacles, gradually introducing its products into one market after the other, until it eventually attained the point where the quality of the goods it sold was recognized and business could be secured without concessions in price from the levels charged by European competitors.

Although in its effort to gain a foothold in foreign markets the Corporation was compelled to offer steel, at first, below domestic prices, this condition did not continue as long as is generally believed. For many years prior to the outbreak of the war prices secured on foreign business were practically the same as those obtained on domestic, more in the case of some products, less in others. In 1911, for instance, the average mill price received by the Corporation on rails exported was $27.32 compared with $28.00 in the home trade. Rail exports for the year were valued at $11,377,000. A concession of 68 cents a ton does not seem extravagant in view of the large volume of business obtained. In 1918 average price realized for nails for export were $17.49 a ton, and in 1919 $10.02 a ton, higher than the average received on domestic shipments.

The European war, of course, changed the export situation for the time being completely. The British navy stood between Germany, the largest exporter, and her foreign markets. Belgium's mills were seized and in some cases destroyed by the invading Hun. England, of necessity, had to turn the mass of her steel output into shells, guns, and other war materials. There was but one country that could supply the hungry world with steel—the United States. And to it every consumer turned.

From almost complete indifference the American steel trade turned to enthusiasm regarding foreign business,

Steel export companies sprung up like mushrooms anywhere and everywhere. So great was the need of foreign buyers of steel, that any one, with or without capital, could become a broker in the metal, and was sure of getting all the buying business he could handle. The trouble was to get the steel.

Most of the export firms and corporations that sprung up at this period will eventually disappear. Many of them have already done so. But there are a number, backed by conservative and financially strong interests, that are in the business to stay, and practically every American steel manufacturer, either directly or through one of these agencies, to-day exports part of his product and expects to continue to do so. The steel trade at large now realizes, what the Corporation did from the beginning, that a permanent export business is of major importance in assuring stability in trade conditions.

How much of the export trade secured during the war years can be held permanently is entirely a question of opinion. Undoubtedly, Great Britain and Germany will strain every effort, when they get over their present difficulties, to regain the business they lost to us between 1914 and 1918. They are already starting to compete. And France, having recovered the vast ore deposits of Lorraine, may become a steel exporter, too. On the other hand, some authorities are of the opinion that manufacturing costs of steel in England and Germany at the time this is written are higher than in the United States, and that the European producer will never regain the advantage of low labor costs he once enjoyed. Time alone will settle these questions. But with the steel trade of the United States as a whole devoting its energies to cultivating and holding foreign markets the probabilities are that at least a substantial portion of the gain in exports shown in the war period will be maintained indefinitely.

The Steel Products Company has not sought merely to increase the gross tonnage of its business. In the years pre-

ceding the organization of the Steel Corporation the steel exports of this country consisted very largely of the cruder and less profitable materials, particularly iron ore, pig iron, billets, and steel bars. It will readily be seen that the most important business is that which shows the greatest profit, that in finished rather than in raw or semi-finished material, the finished product meaning not alone larger profits to the shipper, but more employment and a higher rate of remuneration to labor. The higher degree of finish to the products manufactured the greater the wages paid to the worker. In exporting iron ore, pig iron, scrap and cast iron, only the cheapest materials are involved, the lowest paid labor engaged. It is a question whether such exports, particularly those of iron ore and pig iron, are of any real benefit to the country as they involve the sacrifice of natural resources usually at such unremunerative prices that from the standpoint of conservation it might appear wiser, to economists, to withhold these reserves for domestic rather than foreign consumption. And the policy of the Corporation in developing its world trade has been in harmony with this thought; its efforts have been consistently to decrease the volume of its foreign sales of the less-worked-up materials and to increase sales of the more highly finished products.

As may be supposed, conditions brought about by the war changed the situation materially, hence, figures illustrating the policy of the Corporation to develop exports more along the line of finished materials must be sought in the pre-war period. In 1912, the record pre-war export year, the Corporation shipped abroad 2,223,536 tons of finished steel products and only 42,031 tons of pig iron, ingots, and scrap. In the year 1904, immediately following the organization of the export company, foreign shipments were 1,002,967 tons of a gross value of $31,388,139, an average of $31.30 a ton. These figures are f. o. b. on the seaboard. In 1912 the tonnage exported was 2,265,567 of an average value of

$40.60 a ton or a total value of $91,984,239. In the period indicated there had been an increase of 125.9 per cent. in tonnage, of 193.1 per cent. in total value, and of 29.7 per cent. in the average price, more than $9.00 a ton. Incidentally, the average price received on domestic business by the Corporation declined from $41.34 a ton in 1904 to $36.53 a ton in 1912, or nearly $5.00 a ton.

Part of the gain in export prices during the period in question was due to the increasing percentage of more highly finished goods in total export shipments and part to the fact that the Corporation's products were becoming more established in world markets and were getting the confidence of buyers therein.

How important has been the part played by the U. S. Steel Corporation, through the Steel Products Co., in developing the iron and steel exports of this country, is shown in the table below. Tonnages given for the United States include only iron and steel exports proper, and not machinery and other articles not manufactured by the Corporation, or scrap sheet and iron:

YEAR	UNITED STATES GROSS TONS	U. S. STEEL CORPORATION GROSS TONS
1904	1,139,519	1,002,967
1905	1,002,289	939,517
1906	1,314,444	1,123,545
1907	1,276,292	982,084
1908	942,409	765,947
1909	1,218,225	1,000,395
1910	1,509,864	1,270,599
1911	2,102,014	1,712,877
1912	2,826,576	2,265,567
1913	2,640,142	1,797,948
1914	1,512,848	1,108,483
1915	3,450,783	2,355,858
1916	5,885,948	2,463,922
1917	6,268,514	2,229,747
1918	5,341,360	1,648,160
1919	4,354,086	2,004,190
1920	4,925,000 (est.)	1,645,192

Between 1904 and 1912 the Corporation's exports increased 1,262,600 tons, and the exports of the country 1,687,057 tons, the Corporation's increase in shipments accounting for approximately 75 per cent. of the total gain shown by the United States.

During the years of the World War the country's annual exportations of iron and steel products were greatly increased as compared with the largest pre-war year. During the same period the Corporation's exports were only slightly increased. The reason for this was that the Corporation's operations were largely confined to commercial products and not to war munitions. Large quantities of steel were, however, produced and delivered to the government and to government agencies for use in the manufacture of munitions and for other purposes in carrying on the war.

Government records show that the exports of the United States in 1900, the year before the Corporation was organized, were 1,154,284 tons, and in 1901, 942,689 tons, these figures falling to 372,399 tons in 1902, and 326,590 tons in 1903. Hence, it has been urged that the immediate effect of the Corporation's organization was adverse to exports. But the government figures include a large number of items such as subsidiaries of the Corporation do not manufacture, or such as they do not now export—for instance, many articles manufactured of steel, and steel scrap. As a matter of fact, the companies merged into the Corporation exported 291,000 tons of steel products in 1901. In the following year, the big company shipped more than 300,000 net tons.

To-day the Corporation's products and agents penetrate into almost every part of the known globe. Its ships plow nearly every sea. The goods it sells to the world range all the way from wire nails and watch springs to the steel frames for great buildings. In Buenos Aires, for instance, the Corporation maintains its own force of erectors, and nearly all the big modern buildings of the Argentine capital have

had their skeletons put together by the "Steel Trust" riggers, the men whom Farrell once described as working with one hand for their job and holding their lives in the other. The bulk of the steel used in the construction of the Panama Canal, about 175,000 tons, was supplied by subsidiaries of the great company.

Some of the principal markets for United States Steel's surplus output, with the products they take are: Iceland, wire products and structural steel; Java, Sumatra, and Borneo, oil piping and galvanized sheets; India, sheets and wire products; Argentina, structural and merchant products; South Africa, pipe and light rails for use in diamond mines; Pacific coast countries of South America, roofing material, wire, rails, etc.; Patagonia, railway material; Canada and Mexico, practically every product made; Northern Africa, wire and sheets; Egypt, wire and cotton ties; Australia, a general line; the countries formerly comprising the Austrian empire, wire goods and pipe; Syria and the Holy Land, wire fence, pipe, and small nails used in putting together date boxes; Rangoon, pipe, nails, fence, and sheets; West Indies, a general line; Rumania, oil pipe; Central America, a general line; Greece, pipe, wire, sheets, etc.

China has for years been an important consumer of American steel. Her takings cover many lines and include bridge material, pipe, sheets for roofing as well as for making stovepipes; tin plate used in making containers of egg yolk, which she ships principally to the United States, wire goods of various kinds, nails, including an extremely small type used in making bamboo furniture. In addition, owing to her low labor costs, China is a great market for scrap steel, such as defective wire rods, wire shorts and seconds, bar ends and plate cuttings, which are worked by hand into all sorts of implements. The patient and industrious Celestial even finds use for old horseshoes, which he makes into razors.

The Corporation has thirty-six foreign offices, located in Argentina, Australia, Belgium, Brazil, British India, Canada, Chile, China, Cuba, France, Holland, Italy, Japan, Java, Mexico, Norway, Peru, Russia, Spain, South Africa, and the United Kingdom. In addition to these, it has one hundred and thirty-six distributors located in forty-four foreign countries.

Although the Steel Products Co. avails itself of the facilities for shipping offered by the many steamship lines plying between America and foreign ports, the enormous expansion of its export trade has forced it to establish and maintain a large ocean-going fleet of its own. Formerly, the greater part of this fleet was chartered, but now the Corporation owns twenty vessels, and has only a few others chartered. These vessels carry its products all over the world, touching at many little-known ports and harbors, the waters of which are never disturbed by the prows of regular liners. At these places they put off loads of rails, tools, and diversified products, instruments with which pioneers, like railway builders, are extending the marts of civilization into untrodden lands.

All of the owned vessels fly the Stars and Stripes, those built in foreign countries having been transferred to American registry immediately upon the passage of the Ship Registry Bill, in 1914.

Most of the ships owned by the Corporation were built at its own plants in New Jersey and Alabama. The Federal Shipbuilding Co., the Corporation's shipbuilding subsidiary near New York, has supplied it, so far, with nine vessels, each ranging from 3,450 to 3,821 tons net register. The Chickasaw Shipbuilding & Car Co. is responsible for the construction of four others, the largest of which, and the largest boat owned by the Corporation, is 4,045 tons net register on about 10,000 dead weight. The other seven vessels were purchased. At the time of writing the Corpo-

ration has under construction fourteen other vessels, all of which will be added to its fleet when finished.

Two of the Corporation's boats were lost during the war, one a victim to a German submarine and the other running aground off the Chilean coast early in 1918.

No less than fourteen different steamship lines are operated by the Steel Products Co., which through them handles its fleet. These lines are: Isthmian Steamship Line; New York and South America Line (to Chile and Peru); Pacific Coast Service (to Pacific coast, United States, and Canada); New York-Far East; New York-Rotterdam Service; New York-Mediterranean Service; Gulf-Rotterdam Service; Gulf-River Plate Service; Gulf-India Service; Gulf-Scandinavia Service; Pacific Coast, United Kingdom & Continent Service; Norton Line (New York to River Plate); United States and Brazil Steamship Line; Panama-Far East Line.

The shipping of steel to certain points lacking a regular service often makes necessary the employment of expedients to reduce the attendant costs. For instance, prior to the opening of the Panama Canal, a fleet of six vessels was engaged in the trade with the east and west coasts of South America. These vessels sailing from the Atlantic seaboard made calls at various points in Argentina, Chile, Peru, and thence to British Columbia, where they found themselves empty and without opportunity for picking up a cargo for the return trip. The expense of the long journey in ballast round the Strait of Magellan home was prohibitive, so these vessels usually made trips to French or English ports, carrying general merchandise, making the shorter trip across the Atlantic to their home port under ballast, or with a cargo if it was possible to get one. Such a voyage would cover 35,000 to 40,000 miles and take about nine months. The opening of the Panama Canal, however, has changed the conditions that made this necessary.

The shipping of steel to the less-known parts of the world

involves difficulties never encountered in the home market. The men in charge of exports must be men of initiative, accustomed to overcoming handicaps as they arise and to deliver the goods without the aid of the efficient methods of civilization.

On one occasion a special order for a number of boilers took one of the Corporation's vessels to a harbor on the west coast of South America where the arrival of a steamer was a rarity, and facilities for landing cargo were conspicuous by their absence. The lack of hoists or any other method for lifting the boilers ashore was easily overcome, however. The crew of the ship was ordered to plug up the boilers at both ends and hoist them overboard, floating them on the waves to the sandy beach.

But this novel method of delivery created a dearth of labor in the vicinity. The natives, at the sight of the huge steel cylinders leaping from the waves and rushing ashore on the tide, decided that they were strange and fearsome monsters of the deep and they fled in panic to the woods where they remained for several days before they could be induced to return and carry the boilers to their destination.

On another occasion similar difficulties were encountered, but the cargo in this case was one of steel rails for the first line ever built to Buenaventura, Colombia. The rails had to be unloaded separately and sent ashore one by one on the little native dugout canoes. It was only the skill of the natives in handling their frail barks with such unwieldy cargoes that prevented a large part of the shipment finding a resting place at the bottom of the harbor.

The American Bridge Co. has erected a number of bridges in the Far East. Some of these have been in the interior of China, where the rivers, subject to seasonal floods and periods of absolute dryness, provide the main highways for freight traffic. In such instances the steel for the bridges was hauled up the river beds during the dry seasons, and if the rains

arrived before the destination was reached, the steel was simply left on the river bed until the subsidence of the flood permitted the resumption of the journey up-stream.

In developing its export trade the Steel Corporation has performed a real and important service to American commerce generally. To a great extent, shipping depends on the trend of "weight cargo," and exports of other goods classed as "measured cargo" depend similarly on shipping facilities. By supplying the heavy cargo for numerous markets where American goods had never sold before the Corporation made it possible for manufacturers of many lighter products to develop business for themselves in these new markets. In other words, it blazed the way for American commerce as a whole. How great is the debt that American business generally owes to the Corporation, and to a less extent to the Standard Oil and International Harvester companies, is plain when it is realized that these three companies shipped for many years more than half the "weight cargo" leaving the shores of the United States.

One of the principal benefits of large exports is its effect on labor in the producing country. The Corporation's effort has been to find a regular market in foreign countries for 20 per cent. of its total output. This level was never actually reached under normal conditions, although during the war exports did, at one period, run about 33 per cent. of total production for a time. Taking the year 1912, the record pre-war year for exports, as a representative period, we find that shipments to customers abroad represented nearly 18 per cent. of total finished steel delivered by the Corporation's mills. As the "Steel Trust" in that year employed an average of 221,000 men, this meant that about 39,000 workers were busy on material destined for export and that $34,000,000, of the Corporation's payroll of $190,000,000 was being paid to American labor by foreign consumers. In 1919, 16.5 per cent. of the total business was export and by

the same analysis, foreign buyers paid American workmen in the Corporation's plants more than $79,000,000 in wages.

In the final analysis, this figure will be increased, as the Corporation under normal conditions encourages and assists companies manufacturing its products into machinery, cars, locomotives, etc., to expand their exports, by giving price concessions on steel purchased for that purpose. This re-export business gives work to a substantial number of the Corporation's employees.

The building up of the vast export sales organization maintained by the Corporation has been a Herculean task, but it has been well worth the effort. By establishing its name and its product all over the world the Corporation has not only added to its profits and to its markets but it has helped to relieve the pressure of over-production which the industry feels from time to time, and thus it has conferred a substantial benefit on the steel trade as a whole.

CHAPTER VII

THE SPIRIT OF THE CORPORATION

TO ONE interested in social and industrial questions a tour over the vast properties and plants of the United States Steel Corporation can hardly fail to be of great educational value. It has been the writer's good fortune to be able to make such a tour on more than one occasion. He had expected to be, and was, impressed by the various processes whereby iron ore is converted into steel ingots and then into rails, tubes, structural shapes, plates, bars, wire, nails, tin plate, and other products; by the monster machines used for loading and unloading ore; the blowing furnaces, pools of molten metal; the great rolls through which the red-hot steel is passed on its way to becoming a finished article of commerce; the mining of coal from the bowels of the earth, and the thousand and one other sights of what is probably the most spectacular of all industries.

But the more lasting impression was made not by the mechanical apparatus but by the human factor, the manner in which the vast human machinery that makes the Corporation was handled; the organization that made it possible for an army of more than a quarter of a million men to work in complete harmony and to a single end. In a word, the spirit of the Corporation.

As one becomes more and more familiar with the great company's activities at first hand, more and more does it become plain that the entire organization is permeated with this spirit. From Judge Gary, its chairman and chief executive, and James A. Farrell, its president, who directs the

manufacturing and commercial operations, down through the heads of the various constituent companies, and so through the subordinate officials, through those whom we may call the non-commissioned officers of the steel army, the foremen and mine captains, and finally among the men, both skilled workers and common laborers, there is evidence nearly everywhere of a universal sentiment of loyalty, of personal interest in the fortunes of the big company and of the will, on the part of each man, to give the best in him for the general result.

The above statement was originally penned six or seven years ago, after the writer's first tour of the Corporation's plants. Since that time the world has seen a general upheaval of labor. The Corporation itself has had to fight a great strike, and it would therefore be natural to suppose that the spirit of the Corporation had been adversely influenced during these trying years, but a recent visit to the Corporation's plants did not bear out such a presumption. Rather, it left the impression that in spite of general labor unrest and notwithstanding the efforts of labor leaders to destroy it, the spirit of loyalty and coöperation is still strong in the great mass of the workers.

What is the reason for this spirit? How had it been possible to leaven with it so great a mass of men of different nationalities and varying degrees of intelligence? An excellent answer to these questions was furnished by one of the men, not one of the executives or operating heads, but one of the rank and file. He said:

"In the Steel Corporation the man who gives gets. Question those who are in the higher positions, who are drawing big salaries, and you will find that they all worked their own way from the bottom. Several of the men holding important jobs, now my bosses, I knew when they held little ones, and in every case I was satisfied that the advancement they got they fully deserved. I don't believe that there is a

single official of the Corporation, or of any of its subsidiary companies, who got his job through pull. Hard work is the only key to success with us, and it is a sure one. In brief, I feel bound to give this Corporation a square deal because I know that it will give me a square deal."

A square deal—that is the secret of the Corporation's spirit. The desire for justice, for fair and full recognition of fair and full service, is deep grounded in every man, and the management of United States Steel, by giving each worker the assurance that he will get just what is his due, has secured for itself the entire coöperation of most of its employees and has, as a result, an organization that probably could not be equalled elsewhere in the industrial world.

The Steel Corporation is a true democracy. No position in it, however high or responsible, is beyond the reach of any employee who proves his ability to handle the job. Farrell, now president, started as a laborer in a wire mill. The late Thomas Lynch, for many years head of the Frick Coke Co., handled a pick in the coal mines of that concern. Charles M. Schwab and William Ellis Corey, two former presidents of the Corporation, both started from the very bottom, as did Alvah C. Dinkey, one-time head of the Carnegie company, and a number of others. Even Gary, although he did not become connected with the steel industry until in middle life and after he had made a marked success in the legal field, was not the son of a wealthy man, and won his way to fortune by hard work combined with unusual business ability. There is no open sesame to honor and advancement in the big company, nor for that matter in the steel trade as a whole; the keys to success are ability plus energy.

"Nor could it be otherwise," said one of the men who had himself climbed the ladder; "in steel making harmonious team work is essential to good results, and the natural leader rises to the top by the general recognition of his fellows."

Efficiency, that supreme factor in large output and big profits, has become a fetish in industry in recent years. In its final analysis, "The Spirit of the United States Steel Corporation" is efficiency, not applied merely to the mechanical processes of manufacturing, but to the human element behind these processes; the efficiency that abides in a healthy, well-housed, and contented workman.

The Corporation has always taken a keen interest in matters affecting conditions of labor. It has lent its influence, its money, and the time of its officials to better these conditions, to provide more attractive homes and more sanitary and healthful conditions for its men, better educational facilities for their children, and wholesome amusement for all. For itself, the big company expects the benefit from the resultant increased efficiency and loyalty. For the worker, the most important gain is added self-respect.

George G. Crawford, president of the Tennessee Coal, Iron & Railroad Co., says on this point: "Summed up, the end of all social betterment work is the inculcation of self-respect. The worker possessing this attribute is worth more to himself, to his employer, and to society generally, than the man lacking it. Without self-respect, he remains a common drudge, his value at best stationary, but more likely receding. With it comes ambition and energy, and it is only the short-sighted employer who does not set high store on these qualities and encourage their growth. The lowest kind of labor is always to be had, but the men with ambition and the will to make good that ambition, the men of real value to themselves, are not so easy to find—and they are many times more necessary!"

Mr. Crawford pointed out that many young men who might be marked out for advancement in the steel industry, where their energy and ability would be quickly recognized

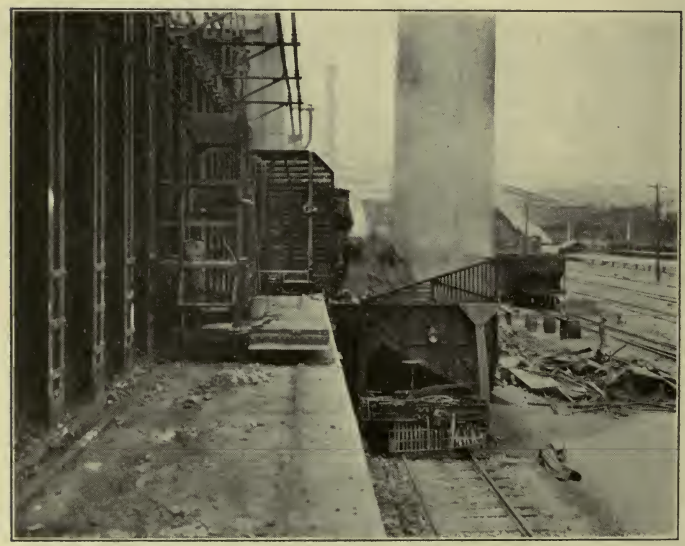
and rewarded, prefer to go into offices or stores as clerks, although the field of advancement there is much smaller because natural conditions in a steel mill or coal mine, unless mitigated by the efforts of the employer, were such as to injure their self-respect. By surrounding living conditions in the industry with those things that make for clean, decent manhood such men would be attracted and the employing corporation would thereby open to itself new fields for recruiting to its organization the highest type of men.

The work done by the Corporation in making conditions at its plants more safe and sanitary, in endeavoring to improve home conditions among its workers, in providing better educational facilities for their children, and so on, will be detailed in another chapter. Any official of the Corporation or of such concerns as have worked along similar lines will tell you that the installation of these helps to better living is plain, practical business. That the gain in efficiency pays many times over the outlay involved. They studiously deny altruistic motives. But the observer who has an opportunity to become familiar with their activities can hardly help arriving at the conclusion that the men who engage in this work for the improvement of working conditions usually become engrossed in it for its own sake. That the human side of the work, deny it as they will, eventually and enevitably comes to occupy the chief place in their minds.

Under the Corporation's stock subscription plan many thousands of employees have become stockholders of the great company. It has been suggested by those who see nothing but menace to the workers in every action of a big corporate enterprise, by those to whom the very word "corporation" is anathema, that this plan had for its real object the subjugation of the worker by inducing him to invest part of his wages in the securities of the employing

"Drawing" Bee-hive Coke Ovens

"Pushing" Coke in By-Product Oven



The Other Side—Coke Falling into Car

Two Views of Modern By-Product Oven

company and then demanding from him unswerving obedience; enslaving him by holding over his head the fear of the loss of his investment. It has been claimed that the plan was a master stroke to give the Corporation the whip hand in the event of a strike. It is, of course, impossible to argue motives, but the plain facts are that the plan has not worked out this way.

Far from instilling the spirit of fear into the men, it is noticeable that stockholding employees regard themselves, and rightly, as owners in the vast enterprise of which they are a part, that they feel a genuine interest in its welfare and work wholeheartedly to further its interests. They take a pride in the Corporation that is very real and apparent and it is not strange that this should be so. If the Corporation designs to make its workers subservient it is ipso facto defeating another great end it is unquestionably striving for—efficiency. Because self-respect and servility are implacable enemies and cannot exist together.

The offering of stock to employees on attractive terms is merely another efficiency measure. Each employee who is a part owner in the business works for more than his wage. "His heart is in his work and the heart giveth grace to every task." Moreover, the plan encourages thrift, and every employer knows that a thrifty worker is more reliable than his spendthrift brother, less prone to the inefficiency induced by financial worries. Finally, the having of a stake in industry and through it, in the country's prosperity, makes a man a better citizen and increases his independence and self-respect.

If the subject of self-respect appears to be harped on to some extent, it is because it is of paramount importance, its influence affecting not only the worker and his employer, but the whole community. If the writer were asked to sum up in a few words what the Steel Corporation has done for industry, these words would be: It has exerted an enormous influence

in helping the worker, the common laborer, to become a self-respecting citizen.

The tangible gain to the Corporation has been enormous. The intangible gain, although it cannot be measured, has almost certainly been many times as great. The management of the big company realized that the workers' rights to a decent life were fully as important as the rights of capital, and that more, both in mental satisfaction and in profit, was to be gained from a recognition of these rights than from their denial. Perhaps, too, it saw that sooner or later the day would dawn when the worker with his hands would demand fair treatment, and it had the foresight and the courage to hasten the dawn of that day.

In the matter of wages the Corporation's course has been in entire harmony with its general policy toward the worker. Since its organization in 1901 it has many times, and always voluntarily, increased wage rates, and in doing so it has set a lead which other steel companies have found themselves forced to follow. Only once has it ever reduced wages and then but a small amount and only after the dividend on the common stock had been eliminated. The wages were soon restored and frequently thereafter advanced. Its principle has been that capital and labor both have important rights in the financial results of industry, but that labor is perhaps more directly concerned and should therefore be the last to suffer in times of stress.

Since 1901 the average wage rate of the steel worker has been increased approximately 237 per cent. and this increase has been due almost entirely to the Corporation's stand on this question. Any one who doubts this has but to ask the competitors of the big company to be convinced. In 1911, when steel prices were at an unprofitable level and business was slack, the heads of more than one independent company expressed the opinion that a reduction in wages, what they called the liquidation of labor, was necessary, even impera-

tive, but that they were restrained from attempting this liquidation while the Steel Corporation continued to pay its men the old rate. They said in effect: "The United States Steel Corporation boosted wages to the present high level. Let it take the lead in lowering them." But the Corporation refused. Instead, with the first signs of an improvement in business, it gave wages another boost. Again in 1914, in the face of the worst period of depression in years, and with world industry demoralized as a result of the outbreak of the European war, and in spite of the fact that the Corporation had been compelled to forego the payment of the dividend on its junior stock and was not fully earning its preferred dividend, its management refused to let the worker suffer. So strong was the sentiment throughout the trade at this time in favor of the liquidation of labor that a wage cut was looked on as not only justified, but inevitable, and it is generally understood that even in the Corporation it was only the insistence of Judge Gary that prevented its occurrence.

At the present writing, world industry is going through a process of deflation from the high prices induced by the war. In some instances the effect is already visible on labor. Cotton mill workers in some parts of New England have themselves suggested a decrease in pay to keep the wheels of industry running. In the steel trade costs are admittedly high and wages constitute the chief factor in costs. But if one may conclude from Judge Gary's public utterances in recent months the thought of reducing wages at present is far from the mind of the Corporation's management. A liquidation of labor may occur later, but if it does, it is a reasonable assumption that, so far as the Steel Corporation is concerned, it will not take place until living costs have been at least sufficiently deflated to make the new real wage of the worker as distinct from his money wage, at least as high as it is to-day.

Average wages paid by the Steel Corporation to its employees during the past eighteen years have been as follows:

1902	$716.88	1911	$819.85
1903	720.08	1912	856.70
1904	677.18	1913	909.50
1905	710.78	1914	905.36
1906	729.86	1915	925.06
1907	765.18	1916	1,042.41
1908	729.44	1917	1,295.87
1909	775.77	1918	1,684.58
1910	800.95	1919	1,902.13

1920 (partly estimated) $2,169.00

Although the average wage in 1914 was some four dollars less than in 1913, the average day wage to the worker, exclusive of the administrative and selling cost, was $2.88, compared with $2.85 the previous year. This is significant as indicating the policy of the Corporation to equalize as much as possible the amounts paid to different classes of workers. In instituting advances, it has always been the lowest classes of labor that have benefited most. The workers themselves have testified to satisfaction with this policy and their recognition of its essential justice.

The Steel Corporation has been subjected to occasional attacks because of its attitude toward labor unions. It neither encourages nor approves unionism. It does not contract with unions as such. It stands for the open shop. As it is plain that this biggest of all employers has not sought to crush the worker, that it has, in fact, done much to make his lot better and brighter, the question may fairly be asked why it is opposed to dealing with organized labor.

The reason is not far to seek. Unionism is opposed to efficiency, it destroys the *esprit de corps* that is so important in getting the best results from a large body of men. It prevents promotion according to merit. In its very essence it is antagonistic to the employer; it sets labor and capital into two distinct and constantly armed camps; it would make war between capital and labor. And the management of the

Corporation believes that the only workable solution of the whole industrial problem is to bring labor and capital into friendly coöperation, to give labor a part in the earnings of industry, making the interests common.

This cannot be accomplished in a hurry. A movement of so vast a magnitude must necessarily take time. But had the Corporation's employees been organized it is doubtful if the betterment of conditions of its workers, and consequently of the steel workers of the country, would have progressed as rapidly as it has.

The labor union, if used to help the oppressed worker, is unquestionably a beneficial factor in industry. Used as it too often is, to promote the selfish interests of its leaders, and to impinge upon the rights of the public at large, it is just as surely a great evil. The logical result of union labor as preached by its principal exponents is to cripple initiative, and to oppress the worker who prefers to stand on his own feet. And, in America at least, the majority of the workers are of this independent type. And in maintaining its policy of the open shop the Corporation has been fighting the battles of this class of workers.

The writer has tried to show that loyalty and coöperation permeate the United States Steel Corporation. That it is the result of the endeavor on the part of the big company to give to the men who make up its organization absolute justice, the square deal; its effort to make the worker, even the poorest, an independent, self-respecting citizen, and to give to every man in its mines, mills, offices, etc., an opportunity to share in the profit derived partly from his efforts. All this to promote efficiency, the "spirit of the Corporation," to increase the value of the worker to himself, to his employer, and to the community. He believes that the facts justify the statement made in an earlier chapter that the organization of the United States Steel Corporation was the greatest step that has ever been made toward the highest form of socialism.

CHAPTER VIII

THE CORPORATION'S IMPLEMENTS

WE LIVE to-day in the "Age of Steel." The metal probably plays a more important part in our civilization than any other product made by the hands of man. Our big buildings, our navies (both war and merchant), our trains and the rails they run on, machinery of all kinds, tools for every trade—all steel. Furniture, watch springs, even wire hair for stuffing mattresses and other uses—steel again. And new uses for the metal are being discovered almost every day.

It is difficult to realize that the age of steel is hardly more than half a century old. But fifty years ago steel, commercially, was still something of an experiment, struggling against iron for its place in the sun. At that time the head of one of the greatest railroad systems of America dismissed a persistent salesman who had been trying to secure his order for steel rails, with the exclamation: "Steel rails? Bosh! Stuff! Nonsense!" To-day that line has many thousand miles of track and every rail in it is steel. Not two generations ago engineers viewed askance the plans of the designer of the first skyscraper. They regarded as absurd the proposal to build "a steel bridge up into the air." To-day the Woolworth Building towers nearly eight hundred feet above the pavement of Broadway.

From the day when steel was made "by the spoonful" to the present, when the great "Steel Trust," with its thirty-eight Bessemer converters and 334 open-hearth furnaces, is capable of producing some 65,000 tons every twenty-four

hours, is a far cry reckoned in terms of industrial development short as the reckoning may be in years. The pioneers of steel never dreamed of the enormous proportions to which the industry would grow, the innumerable uses to which the metal would be put.

What is steel? Iron that has been refined and hardened by processes in which heat plays the most important part.

Iron ore is found in large quantities in many parts of the world. Sometimes it is loose, like earth, and again it is a rocky formation. Its color also varies, some ores being red, others yellow, and so on through various shades and tints. But the pure metal is white and, strange as it may seem, quite soft. Cleansed of its impurities, and hardened by a mixture of carbon and other ingredients, it becomes one of the hardest of metals.

Iron, apparently, is common to all the planets. Meteorites usually contain a large percentage of it. So general is its distribution on this planet that a theory has been advanced that the globe on which we live is nothing but a vast mass of iron thinly incrusted with rock and earth, and that the deposits found near the surface are merely the outcropping of this inexhaustible mine.

The Western Hemisphere is particularly favored in regard to deposits of iron. Immense ore bodies exist in the United States and Canada, Chile, Brazil, Cuba, and other parts. Of the known ore beds in this country, the most important lie around Lake Superior. Near this great inland sea there are no less than six different ore ranges, the Mesaba, Vermilion, Marquette, Gogebic, Menominee, and Cuyuna. Of these the Mesaba is the largest, richest, and most easily worked and from it is taken a material portion of all the ore mined in the United States. There are ore bodies of considerable size in Alabama, New York, New Jersey, Pennsylvania, Colorado, Wyoming, New Mexico, and Utah, and

another large deposit is now reported to have been discovered in Oregon.

Some American steel makers import part of the ore they use from Sweden, Cuba, Spain, and Chile. But the Steel Corporation's subsidiaries have depended so far upon the Lake regions for their ore supplies, except the Tennessee Coal, Iron & Railroad Co., which uses Alabama ores.

Although iron had been made in America long before the War of Independence nothing was known of the immense deposits in the region of the Great Lakes until 1845, in which year Philo M. Everett was guided by Indians to "a mountain of solid iron," to which he gave the name of the great missionary explorer, Marquette. Shortly afterward a surveyor named Stunz set out to seek gold in the wild region north of Superior, and came back to civilization with a tale of vast iron deposits in what is now known as the Vermilion range. But so far and hard to reach were these deposits that it was not until the early seventies that capital, as represented by the late Charlemagne Tower, could be interested in the exploitation of these deposits.

Still another gold seeker was responsible for the discovery of the greatest of all the ranges, the Mesaba. Some years before the Civil War Louis H. Merritt, a prospector, struck out into the woods in quest of the yellow metal, but brought back with him nothing but a few samples of iron ore. Little did he dream that he had found what would one day prove more precious than gold.

Merritt told of his discovery only to his four sons, and it was not until 1885 that these young men staked out their first mine in the desolate region. The Merritts were lumbermen, and the mining fraternity, having proved to its own complete satisfaction that iron deposits in the Mesaba section were geologically impossible, scoffed at their enterprise, but in one single year since the Steel Corporation alone has taken

24,928,039 tons of ore from this range, a single mine yielding 3,500,000 tons.

There is a legend told in Minnesota, the story of a practical joke which had a different end from that expected by its perpetrators, and the result of which has been a great boon to the cause of education in that state. The story had its beginnings before the Civil War. At that time, it goes, the public school system of Minnesota, neglected in State appropriations and impoverished, clamored long and loud at the door of the legislature for a share in public lands, and eventually gathered enough popular support to wring from the law-makers a promise of ten sections. The promise was kept, but to the discomfiture of the educators and the amusement of everyone else it was found that the sections lay beyond the pale of civilization far in the northeastern corner of the state, an uninhabited, unexplored territory.

And then Merritt discovered the Mesaba range, and the implements of the steel companies began to shovel gold to the credit of the Minnesota school system.

The story is of doubtful authenticity, but it is nevertheless a fact that the Minnesota schools own large acreages of ore land, and their enormous receipts of royalties on ore shipped therefrom make them probably the richest in the world.

A mine, in the commonly accepted sense of the word, is a deep shaft in the ground from which tunnels, or "drifts," radiate through the ore bodies. But nature, in the Mesaba region, has saved the steel maker the trouble of burrowing under the earth's surface to get at her riches. The majority of the mines here are not mines in the accepted sense at all. They are what a veteran of pick-and-shovel methods called them when he first saw one in operation. "Mine?" he exclaimed. "Why, that isn't a mine, it's an ore farm."

Imagine a vast amphitheatre hollowed out of the ground half a mile wide and a mile and a half, or more, long—these are the dimensions of the Hull-Rust mine at Hibbing—and

descending in a series of deep terraces to 120 feet or more from the surface, every terrace, save the first, being dug out of iron ore, and you will get a vague idea of what one of these Mesaba "ore farms" is. The mines are graded toward one end to permit the entrance of trains, and big steam shovels burrow into the soft ore, scooping up, some of them, seventeen tons of ore at each lift, and dumping it into the waiting cars.

Under these conditions mining becomes principally a matter of speeding up steam shovels and of transportation. At the beginning of the century no mine had ever shipped 500,000 tons of ore in a season. The Hull-Rust mine has shipped more than that a month, a ton of ore every two seconds, allowing for a ten-hour working day.

Exclusive of the mines covered by the now abandoned Hill lease the Corporation has developed more than seventy mines in the Mesaba range. In the Vermilion range it has three; in the Menominee, seven; in the Marquette, twelve; in the Gogebic, thirteen, and in the Baraboo range in southern Wisconsin one. This does not include twenty-one mines of the Tennessee Coal, Iron & Railroad Co. in the South. In a single year, 1916, the Corporation mined 33,355,169 tons of ore, of which 30,255,616 came from the northern regions. Some idea of the immensity of the Corporation's mining operations may be obtained from the fact that the excavations involved in "stripping," or removing the surface earth overburden from the open pit mines, aggregates about a quarter of a billion cubic yards of earth, or more than the excavation made in digging the Panama Canal, in the Mesaba range alone. Total excavation in this range, including mining operations, amounts to about a half a billion cubic yards.

The vast Hull-Rust mine, the greatest of the Mesaba deposits, is perhaps the largest single body of ore in the world. Its exact extent is not known. Only recently it was discovered that the ore body led under the town of Hibbing,

a fair-sized municipality, whereupon it was decided to move the town to get at the ore. So in the summer of 1920 houses and other buildings forming the town were lifted bodily from their foundations and moved to a new location near by. This enormous undertaking seemed to be considered quite part of the day's work by officials of the Oliver Iron Mining Co., which subsidiary has charge of the Corporation's ore operations. An official of that company, questioned about the expense of moving the town, said: "Oh, it will cost a million or more, but there's at least $40,000,000 in ore under the old site."

Ores obtained from the Mesaba and other Lake ranges usually average slightly more than 50 per cent. in iron. There is an enormous amount of ore in this region, however, which runs less than 40 per cent. in metallic content, and further, is too rich in silicon, which factors make it unavailable for steel making without previous treatment, but this ore is too valuable and too much needed to be allowed to go to waste. The Corporation solved the problem by erecting at Coleraine a "concentrator," which is really nothing but a great washing plant for ore, and by this means crude ore containing 37 per cent. or thereabout, in iron, after treatment in which water and gravity are the principal factors, is brought up to an average of about 56 per cent. metal. In one day this concentrator has treated 50,000 tons of crude ore, producing 32,000 tons of concentrates.

Let us leave the mining regions and follow the ore on its journey to the furnaces. The journey is begun in either of the two railroad systems owned by the Corporation, and radiating over the ranges—the Duluth, Missabe & Northern, at the head of which is William A. McGonagle, which serves the Mesaba range principally, and the Duluth & Iron Range, of which F. E. House is president, which serves the Vermilion section.

We shall soon arrive at Duluth, or near-by Two Harbors,

where these roads terminate. Here the ore trains run out on the huge Corporation docks, some of which project half a mile into the lake, and dump their cargo into enormous pockets in these docks. This ends the first stage of the journey.

But our travels have hardly begun. The next stage of the journey is made by boat. The Corporation, through the Pittsburgh Steamship Co., owns no less than seventy-eight large steamers, many of them capable of carrying 12,000 tons of cargo, and all built specially for ore transportation. To and fro between Duluth and Two Harbors on Lake Superior, and Gary, Chicago, Cleveland, Ashtabula, Conneaut, Fairport, and other points in the lower Lake, this great fleet goes constantly except when winter freezes up transportation.

Arrived at the ore docks, the boat makes fast alongside, and the work of putting in its ore cargo begins immediately. This is a rapid-fire operation. A touch of an electric lever and from each of the three-hundred-ton "pockets" on the dock descends a great chute into the maw of the ship, and through these chutes the ore, impelled by gravity, comes cascading.

In a few hours at most the work is done, and the ship is ready for her return trip. The average time taken to load a thousand tons of ore is half an hour, but on one occasion 12,817 tons were put into a vessel in thirty-five minutes. In one day twenty-four boats were loaded with 211,887 tons. From a single dock 10,921,107 tons have been put on shipboard in one season.

A sail of three or four days and we arrive at one of the lower Lake ports. Here the boats are unloaded by methods even more impressive than those connected with the loading operation, and so efficient that a twelve-thousand-ton steamer has been emptied to the last spadeful in three short hours.

Of the various unloading devices employed the Hulett machines are the most modern and impressive. Notwith-

standing their weight, which runs into hundreds of tons, these gigantic affairs are moved up and down the dock and perform all their operations by the touch of a light lever. Almost "a child can handle them." The mighty arms of these machines give them somewhat the appearance of gargantuan grasshoppers. The operator sits in comfort in what corresponds to the wrist of one of these great arms, and, at his will, the clamshell bucket hand dips down into the bowels of the vessel and, opening its metal fingers wide, to a span of 22 feet in the largest sizes, closes with irresistible might on everything within its grasp.

The Hulett machine is the very embodiment of power, power chained and subservient to the will of man. The incalculable force of those mighty fingers would crush a steel railroad car as one might squeeze a sponge. A miscalculation by the operator, and the steel ribs of the unloading steamer would be torn away, gnarled and twisted. And each lift of that hand brings with it a load worthy of its might, some seventeen tons of ore.

Before following the ore farther on its trip to the furnaces we can find time to devote a minute to a related operation, the shipment of coal to the mining regions to supply the power for the operations there. This is marked by the same big-scale, time-saving methods. Arriving at the docks at the lower Lakes, the coal train is run out beside the now empty vessel, and another great machine picks up car after car, and swinging it out over the hold of the ship, overturns it and empties it in a few seconds.

To Pittsburgh, centre of the steel industry, comes a large portion of the ore shipped from the Great Lakes. Ore destined for the Pittsburgh furnaces is brought from the Lake ports by the Bessemer Lake Erie, another Corporation subsidiary, with its two hundred and five miles of main line, the third longest and perhaps the best known of the Steel Corporation roads. The Duluth, Missabe &

Northern holds first place among these roads in respect to mileage, two hundred and forty-seven miles, with the Elgin, Joliet & Eastern second, two hundred and eleven miles, and the Duluth & Iron Range fourth, one hundred and ninety-seven miles. The total trackage of the U. S. Steel roads, including sidings, branches, switches, and yard track, is 3,774 miles, every yard of it maintained in prime condition and absolutely modern.

A line drawn from New Orleans to St. Louis, thence to Kewanee, Ill., through Minneapolis and north to the Canadian border would about form the western boundary of the big Corporation's manufacturing and mining activities. The northern boundary would be the Canadian border (except for one plant at Hamilton, Ont.) with the Atlantic and the Gulf of Mexico forming the east and south boundaries. Half the United States! And another plant is started in Canada.

All over this vast area are scattered the Corporation's plants, but nowhere are they so thickly clustered as around Pittsburgh, the steel city of the world. Here the biggest of the subsidiary companies, Carnegie Steel, has its headquarters, and here, too, is the home of the National Tube, American Sheet and Tin Plate, and American Bridge companies. All the Carnegie plants are in or near Pittsburgh, as are the major part of the plants of the National Tube Co., but the Tin Plate and Bridge companies reach out in many directions. The Chicago territory provides a home and a market for the Illinois Steel Co. with its "South Works" plant at South Chicago and the Indiana Steel Co., which operates the great Gary plant at Gary. The American Steel & Wire Co. has its head office at Cleveland, but its plants are scattered over a great many states from Illinois to Massachusetts and down to Alabama, and it has a plant at Hamilton, Ont.

All over Pittsburgh and its environs are to be seen the

stacks of the blast furnaces of the Corporation and other steel companies in which the ore is transformed into pig iron, the first step in the manufacture of steel. These furnaces, usually built in "batteries" several together, are immense ovens of steel and firebrick in which a temperature of more than 3,000 degrees is generated and in this terrific heat the ore, fluxed with limestone, is melted and converted into iron. From the ground to the tops of the furnaces run "skips" or buckets on inclined tracks, which carry the ore to their mouths, where, with a mixture of coke and limestone, it is dumped.

Soon the ore, coke, and limestone become one liquid mass of fire and the oven, after a sufficient time, is "tapped" by breaking open a small mud-sealed cavity at the bottom and letting the molten contents run out through gutters into receiving ladles. The iron, being heavy, runs out first. The rest, following, is diverted into other gutters and cooled, when it is used for making cement, ballasting railroad tracks, and other purposes. This material is known as slag.

Meanwhile, the iron is carried in the ladles to the mixers, huge cradles holding 250 tons or more each of molten metal, and rocking slowly but continuously to and fro. Into these mixers different heats of iron are poured, and the constant motion of the mixer gradually brings them to a homogeneous mixture, insuring uniformity in the metal.

William R. Jones, or Captain Bill as he was generally and affectionately known in the steel trade, was for many years in charge of the Braddock plant of the old Carnegie company and was one of the most picturesque figures that ever flitted across the pages of the history of the industry. Big, with a temper as hot as the metal with which he worked, but with a heart of gold, he was an ideal leader for a steel mill army. Gifted with unquenchable energy and enthusiasm, he acquired a habit of breaking world's steel-making records, and in the earlier days of his management of the Braddock works

he time and time again set the steel world agog by his feats in the matter of production. He continued to do so until the steel makers of Europe and America became so used to "Jones breaking another record" that his feats went unheeded. And the mixer, which still bears his name, was one of his many inventions.

In a letter to the writer, Andrew Carnegie said of Jones:

"Jones volunteered in the Civil War as a private and returned at its close a Captain. You can't keep a good man down. I wished to make Jones a partner along with many of our pioneers, and informed him of this one morning. His reply was: 'I don't want to be troubled with business matters. You just give me a —— of a salary.'

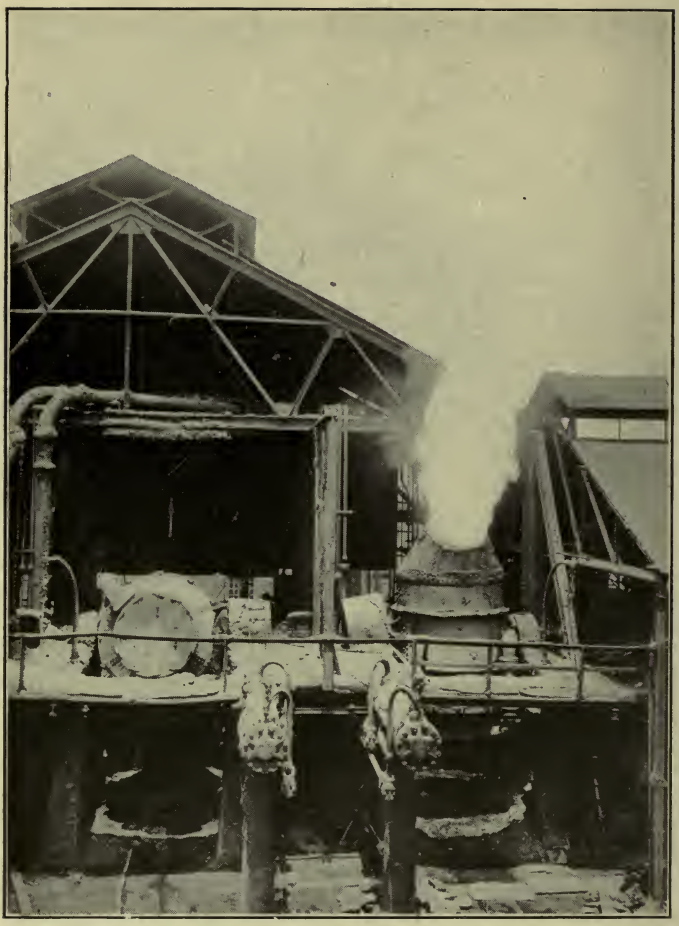
"'All right Captain,' I said, 'hereafter the salary of the President of the United States is yours.' And so it was."

From the mixer the iron is taken to the converter to be turned into steel. And now we come to the most spectacular, the most impressive sight that is to be witnessed in the steel industry, the theme for the poet who may one day be born to sing the Song of Steel.

A Bessemer blow, a converter in action, is a small-sized Vesuvius in eruption, a volcano tamed and chained by man. From its great steel crater shoot forth flames to the height of perhaps 100 feet, showering sparks in every direction and creating a pyrotechnic display of unequalled splendor. Its glare lights up the countryside for miles around, and the hissing and roaring of the molten iron, or rather of the steel groaning in its birth throes, forms a fitting accompaniment. It is a sight that once seen will never be forgotten.

Both England and America claim the invention of the Bessemer converter, the most epoch-making of all the discoveries in the steel trade and one that has influenced all industries, civilization itself, immeasurably. For before it existed steel could only be made by a slow and expensive process in small quantities, and was not available for the

The Original Jones Mixer



A Bessemer Blow

varied uses for which it is employed to-day. Had it not been for the Bessemer converter, there would have been no sky-scrapers, no steel railroad cars, no steel ocean liners, no "Steel Trust."

Shortly before the middle of the nineteenth century William Kelly in America and Henry Bessemer in England were struck by the same idea, that air could be used as fuel, that the oxygen in air, blown through a mass of molten iron, would burn out its impurities and would at the same time blow them away. The records are slightly in favor of Kelly as the earlier discoverer, although Bessemer got all the credit and a knighthood for his work, while the American got nothing. A Bessemer converter is actually a big retort with air holes at the bottom where molten iron is purified into steel with air.

The first attempts at "making steel with air" met with scant success. The pioneers of the new process encountered the same sort of opposition as later confronted George Westinghouse when his fertile brain gave birth to the air-brake. The youthful inventor secured an interview with Commodore Vanderbilt, then head of the New York Central System, and endeavored to interest him in his invention.

"Do you mean to tell me," Vanderbilt asked, "that you propose to stop a railroad train running at full speed with nothing but air?"

"Just that," replied Westinghouse.

Vanderbilt turned to his secretary: "Show this lunatic out and never let him trouble me again," he said.

Kelly's first attempt at purifying iron with oxygen was a failure. The blast was too strong and the iron, along with the impurities, was blown away in one gorgeous display of fireworks. But he was not to be discouraged, and after many experiments got the blast right, only to find that the metal which resulted was too soft, as the small percentage of carbon and other alloys needed to give the steel its hardness had been taken out.

To Robert F. Mushet, a Scotch ironmaker, belongs the credit for overcoming this difficulty. He came forward with a practical suggestion: "Burn out all your carbon and then put back what you need to make the metal hard." Simple enough, but the others had not thought of it. And the thing was done.

The hissing, roaring volcano is easily handled by one man. As he watches the flame that pours from its mouth change from red to yellow and finally burn white, he touches a lever which turns the huge caldron on its axis, while workmen quickly shovel into it the required amount of carbon, silicon, etc. The converter is then further tilted and its contents emptied into a ladle which swings away with its load while the converter is charged afresh with iron.

Open-hearth steel, more popularly used nowadays than the Bessemer product, is made by a different process. As the name implies, the iron is changed into steel in large ovens, where it is mixed with the necessary alloys and purifying ingredients and a considerable amount of scrap. The proper melt being arrived at, the metal, now steel, is run off into ladles.

The open-hearth method has many obvious advantages. In the first place, it gives the steel a greater tensile strength. In the second, using as it does about 60 per cent. of iron and 40 per cent. of old metal, it is an important factor in conserving the natural ore resources of the country and of the world for future generations.

Times change and steel making with them. Open-hearth is fast supplanting Bessemer steel in all markets, and the day may not be far distant when Bessemer will be practically a thing of the past. But it must not be forgotten that the discovery of Kelly and Bessemer—to whose names should be linked that of Mushet—gave birth to the modern steel industry and made possible the age of steel. Open-hearth itself may one day yield to another process. In fact, a

prominent steel manufacturer has suggested that electric steel will be the steel of the future.

All the newer steel plants are equipped with open-hearth furnaces. At Gary, Bessemer is not produced at all, and even the Carnegie Steel Co., which probably did more than any other concern to develop the Bessemer process, now has 133 open-hearth furnaces to 14 Bessemer converters. The Corporation altogether has 335 open-hearth furnaces and 38 converters.

The manner in which the newer process is displacing the older is best illustrated by some production comparisons. In 1901, the first year of the Corporation's existence, the subsidiary companies produced 6,109,306 tons of Bessemer steel to 2,745,514 tons of open-hearth. It was not until 1909 that open-hearth production forged ahead, going to 7,508,889 tons against 5,846,300 tons of the other. But since that year its gain has been progressive and continuous. In 1919, open-hearth production was 12,412,131 tons compared with 4,788,242 tons of Bessemer.

After the iron is converted into steel by either process it is poured into moulds some eight feet high and two feet or more in width. In a surprisingly short time the surface of the metal becomes sufficiently solidified to permit "stripping," or removing of the mould, and we have an ingot, which is steel in its first form.

If the ingot is not to be used for some time, it is permitted to harden, but usually it is taken to what is known as a soaking pit, where, for several days, it swelters in a high but even temperature until the entire mass of metal attains an even heat. If used immediately after stripping, the semi-solidified outer crust would crush and the still fluid inner portion would run out.

From the soaking pit the ingot is lifted by immense cranes and carried to the rolling mills, where it undergoes the various processes transforming it into steel as we know it commercially.

So many and various are these processes that no attempt will be made to describe them in detail. They vary from the rolling of a railroad rail or a fourteen-inch plate of battleship armor to a wire rod about a fifth of an inch in diameter or a sheet of tin plate such as is used in making food containers.

To the spectator all these different processes are interesting and fascinating. Entering the mill at one end the red-hot ingot is gradually reduced in size as it passes through roll after roll and brought to the required shape before being allowed to cool. In one mill we may see the mass of steel lengthened and moulded to the shape of a rail. In another, it is brought to the form of a big "I" beam for bridge or skyscraper. In another, to a slender roll of wire rod, and so on.

The more highly finished forms of steel naturally involve a further series of operations. Wire rods, for instance, are drawn through dies to smaller and still smaller sizes, and sometimes to shapes far from circular, until they become fence wire, piano wire, watch springs, and a thousand and one other products. Much of it goes to the nail mill, probably the noisiest place in the world, where it is cut, sharpened, and given a head. As stated elsewhere in this volume, the Corporation manufactures something like eleven thousand different varieties of wire products alone.

We have now followed the ore all through its journey from the mine to the finished product. But the mining of coal and its conversion into coke plays as important a part in the manufacture of steel as the mining and refining of iron. And the Corporation's coal and coke operations are carried on a scale in harmony with the general immensity of its steel operations. In 1916 the Corporation mined 32,768,381 tons of coal and produced 18,901,962 tons of coke.

In the early years of the steel industry the iron master did not produce his own coke. He bought it. But as the industry became more and more integrated it became obvious that the two operations must go hand in hand if costs were

to be kept down, and to-day most of the larger manufacturers produce all the coke they need in their steel operations.

One of the first and certainly the most important mergers combining steel and coke interests was that which brought together Andrew Carnegie and Henry Clay Frick, and later resulted in giving to the Steel Corporation, when it absorbed the Carnegie Steel Co., control of the vast coal mines and numerous coke ovens originally owned by Frick and his associates.

Long before his death, which took place December 2, 1919, Frick had earned the right to be reckoned as one of the outstanding figures in American industrial history. Like many other Americans who have achieved great success he began life without advantages, starting his business career as an errand boy and later occupying the position of a clerk in a distillery at Mount Pleasant, Pa., in the middle of what is now the big Connellsville coke-producing district.

At that time the American coke industry was in its infancy. The young clerk perceived its possibilities and out of a very slender salary, by frugal living and many privations, saved enough to make some small investments in coal properties. Later, when the coke industry was in the dumps, and most of those connected with it could see nothing but disaster, Frick, convinced of a great future for coke, managed to enlist the aid of a Pittsburgh banker and purchased a number of properties at bargain prices, organizing H. C. Frick & Co., which later became the H. C. Frick Coke Co. In a few years the clerk had risen to be the dominating figure in the coke trade.

When Carnegie decided that economical manufacture of steel implied the acquisition of coke properties he secured control of the Frick Company and later negotiated a partnership with Frick, merging the two companies. Eventually, after a lawsuit and much bitterness between the two men, Frick and Carnegie separated. But when the Steel Corpo-

ration took over the Carnegie Company, Frick was induced to become a member of the Finance Committee, and it is generally recognized that his financial acumen was of enormous assistance to the big Corporation in the days before it had established itself firmly. Frick remained a director of the Corporation and one of the most influential members of its Finance Committee until the day of his death.

Frick left an enormous fortune. Although he left substantial legacies to his children and others, the mass of fortune was distributed among public institutions for the good of the community.

The H. C. Frick Coke Co. is still the most important by far of the Steel Corporation's coke-making subsidiaries. It owns vast areas of land in the Connellsville and surrounding regions near Pittsburgh, but already the writing on the wall may be discerned. The time is coming, slowly but surely, when the great company organized by Frick will produce nothing but coal, when its more than 21,000 coke ovens will be cold, and will no longer light up with their flares the blackness of the night around Connellsville.

At the Frick coke plants coke is made by the old beehive process, in great open ovens, row upon row, where millions of tons of coal a year are turned into coke. But as explained elsewhere, the primitive beehive oven process is wasteful, both as to the amount of coal needed to produce a ton of coke and because the by-products of the coal, tar, ammonia, benzol, toluol, etc., are blown into the air. And gradually the modern coke by-product oven is replacing the old beehive. The Frick Company will be able to hold its own for a long time against the process of modernization. But it must eventually yield.

The operations of the Steel Corporation are not confined to the manufacture of steel. They include a number of auxiliary and incidental activities, including the production of coke by-products, named in the preceding paragraph, a

considerable volume of gasoline, all absorbed by the Corporation itself, the operation of steamship lines, the tale of which is told in the chapter on "Exports," the building of ships, the control of a number of public utilities, and so on.

And the tale of the expansion of the Corporation's activities is not yet told. Already it is going into the manufacture of railroad cars. Land was acquired several years ago for a large steel plant across the Canadian border, at Ojibway, and it is probable that the building of this plant will not now be long deferred. In fact, it is a fairly safe assumption that the only reason for delay in erecting it is that of present inflated costs.

While the growth of the Corporation will not be too rapid, if for no other reason than that its management is averse to achieving anything that might savor of monopoly, there is no question that its future development in regard to expansion of its steel-making facilities and allied activities will keep pace with the development of American commerce both at home and abroad.

CHAPTER IX

THE STEEL TOWNS

PITTSBURGH, preëminent in steel, the home of the company with which for many years Andrew Carnegie set the pace for the rest of the world to follow in steel making; Pittsburgh, her skies blackened with the smoke of hundreds of furnaces that produce more than one quarter of the world's supply of its most necessary metal, naturally comes to mind when one mentions steel cities—she is easily the greatest of them all.

Situated in the extreme west of the state of Pennsylvania, on the border of the great coal deposits of that state, with excellent facilities for getting her ore and coal at comparatively low cost, and having an unsurpassed location in respect to markets for her finished products, Pittsburgh is likely to keep for a long time her commanding position among the steel towns.

And yet Pittsburgh is not among the towns included in the title of this chapter. She is the world's steel city. And this is the story of some of the communities that owe their existence to the United States Steel Corporation, that have sprung up as a result of the extension of its manufacturing facilities, and in the building and management of which the forward-looking influence of the biggest of all businesses has been reflected.

Among such cities Gary, Indiana, holds the foremost place.

Bearing, appropriately, the name of the head of the Corporation, the man who more than any other was responsible for its organization, and beyond peradventure, responsible for

its policies, Gary may be said to represent, so far as a town may, the spirit of the Corporation—efficiency.

Gary's history, to the date when this is written, covers only fourteen years. The site of the city, on the borders of Lake Michigan, in the northwest corner of Indiana and about twenty-five miles from Chicago, consisted of sand dunes on which scrub oak and sage brush grew less than fifteen short years ago. Its inhabitants were wild birds and a few hardy hunters and fishermen, and on one memorable occasion a cave in the dunes gave refuge to the car-barn bandits of Chicago until their surrender was forced by the police. In 1906 the Steel Corporation's management decided that another steel plant was needed in the Middle West, bigger than any then existing, and selected a desolate spot on the shore of Lake Michigan for its location. Thus was the plant and city of Gary conceived.

The magnitude of the project and the difficulties which had to be overcome would have appalled any but so large a corporation. The proposed steel plant could not be operated successfully unless it had a town to house its many thousands of employees, and the site of Gary offered not even the ordinary facilities for town building. It had no harbor, nothing could grow on its arid soil—these were only two of the handicaps. But the Corporation set to work to build a city literally from the ground up, and Gary, with a population of 56,000 to-day, and rapidly growing, was the result.

The Corporation's management has always shown its realization of the fact that "not by bread alone does man live"; that the mere paying of employees a living wage is not sufficient, and that even the least educated worker has an aesthetic sense, even though often uncultivated, that should be developed and pandered to within reasonable limits if the best good of the worker and the employer is to be achieved. To make the big Indiana sand dune attractive seemed an impossible task, but it was accomplished. The Corporation's

engineers apparently took for their guidance the motto that hangs in the office of the big company's chief executive, "It can be done," and made Gary at least an attractive, if not a beautiful, residential town. To do this, nearly two million cubic yards of fertile soil was brought into the town, superimposed on the sand, and used for the laying out of parks, boulevards, and lawns. Many thousands of trees were planted on the soil with gratifying results.

The lack of a harbor was compensated for, and safe haven provided for the ore boats which had to bring raw material to the proposed big plant, by the cutting of a harbor slip five thousand feet long, twenty-two feet deep, and two hundred and fifty feet wide, affording draft and anchorage for the largest lake steamers afloat, and terminating in a basin of ample size to permit these vessels to turn around. In the calm waters of this artificial harbor, protected by a breakwater, the ore boats are unloaded at the rate of 1,250 tons an hour, the ore being conveyed from their holds to a storage yard parallel to the slip until needed to feed the hungry furnaces.

Work on the building of the steel plant and city was started April, 1906. To the Indiana Steel Co., a subsidiary of the Illinois Steel Co., and especially organized for the purpose, was given the task of erecting the steel plant, while the Gary Land Co. was organized and put in charge of the creation of the city.

How gigantic was the task of building Gary may be gathered from its cost to the Corporation. The construction of the steel plant and the creation of the town has involved an expenditure of over $100,000,000, and work is yet to do. Of the fifty-six open-hearth and other steel furnaces contemplated in the original plan, forty-seven have been completed so far. The first heat of pig iron was produced on December 21, 1908, and the first steel ingots early the following year.

The Gary plant is probably the largest single steel plant

in the world. It consists of twelve blast furnaces, forty-seven steel furnaces, a rail mill, billet mill, plate mill, five merchant mills, slab mills, an axle plant, and a by-product coke plant of ten batteries, each of seventy ovens. With these are auxiliary shops, machine shop, roll shop, electric repair shop, boiler shop, blacksmith shop, etc., and the necessary electrical equipment.

Sixteen gas engines of 2,000 H. P. each, supplemented by four 3,000 H. P. steam engines, are used to operate the blast furnaces. The power required to run the open-hearth furnaces and steel mills is supplied by seventeen 3,000 H. P. gas engines, driving an equal number of electric generators, the gas for these engines and for the blowing engines being supplied from the blast furnaces. In this way the power required for the entire plant is supplied by blast furnace by-product gas. Part of the power generated is transmitted to Buffington, five miles away, where it is used to run the machinery of the Universal Portland Cement Works. The rail mill is driven by three electric motors, each of 6,000 H. P.

The annual capacity of the big plant is as follows:

	TONS
Pig iron	2,173,200
Coke	3,360,000
Ingots	3,030,000
Billets, blooms and slabs	1,544,600
Sheet bars	104,000
Rails	750,000
Finished steel, including rails	1,997,900

During the construction of the plant, over 10,000,000 cubic yards of material were excavated and over 1,200,000 cubic yards of concrete placed. More than 150,000 tons of fabricated steel were used in its construction. The plant covers an area of 1,250 acres, and a plot of land of approximately the same size and adjoining the existing plant is being reserved for possible further extensions.

Gary, the town, was incorporated in June, 1906, only a few months after the foundations for the first buildings were excavated. At the first election for town officials, only 33 votes were cast. Seven years later, in 1913, over 9,000 voters marked the ballots.

When the Steel Corporation decided to build Gary it determined to make it both a modern and a model city. The town was carefully laid out by competent engineers and ample provision allowed for growth. It now covers several square miles. Its principal thoroughfares are Broadway, 100 feet wide, and Fifth Avenue, 80 feet wide. These are paved with concrete block and the other streets with macadam.

Citizens of New York and other big cities, accustomed to seeing their important thoroughfares constantly torn up for the laying of sewers, electric wires, etc., would find a pleasant change from these conditions in Gary, where it is never necessary to do such work in the principal streets. All gas and water mains and sewer pipes are laid in wide alleys between the streets and thus all repairs and improvements can be carried on without any obstruction to traffic.

Many pretty homes, a number of them owned by steel workers, make attractive the residential section of the town. The Gary Land Co. has erected a great number of these houses—1,000 or more—and these are offered for sale at prices representing approximately the cost of the land and improvements, with a special discount to plant employees. The prices of these houses range from $1,500 to $25,000. The company also offers for rent, at exceedingly nominal rates, houses built for the most part of concrete and equipped with electricity and all other modern conveniences. All these dwellings are attractively finished and each has its plot of green in front.

The visitor to Gary is never allowed to leave the town without seeing the Y. M. C. A., the finest building in the city, erected at a cost of $260,000 and the gift to the town of the

man whose name it bears. The building contains a gymnasium, swimming pools, class rooms, club rooms, dormitories, and so on. Opposite the Y. M. C. A. is the beautiful Carnegie Library, and not far off, the Federal Building. The Gary Hospital, built and maintained by the Corporation, is absolutely modern, both in equipment and management, and bears favorable comparison with similar institutions in the largest cities.

But the town, Gary, is known first and foremost as the birthplace of the most modern and efficient educational system. The Gary plan of training youth, with modifications, has been extensively copied in many large cities. Unfortunately, after a rather inadequate try-out in New York City, it was abandoned; apparently, however, chiefly because local politics made it impossible for those in charge of the work there to get full results from the Gary methods.

Professor William Wirt, an enthusiast on the training of youth and an iconoclast so far as old methods are concerned, is at the head of the Gary school system. In fact, he originated it. When the town officials and those of the Steel Corporation took up the matter of education, they went at it in a thorough manner and looked around for the best school principal to be obtained. Wirt's plans were approved, he was chosen for the post, and given a free hand in modeling the entire system. The Emerson and Frœbel schools were the result.

Wirt proceeded to turn topsy turvy many of the old ideas in education. He started off with one big advantage over other reformers—he was able to arrange all details from the beginning, even the building of the schools, in accordance with his plan, and he worked out a scheme under which the youth of the town enjoys a vocational training completely equipping graduates of the school for entering practically any chosen walk in life.

But Prof. Wirt has done more than this. He has succeeded in making education attractive for the young people of Gary.

One of Wirt's pet theories, not one new or exclusively his by any means, is that play is as essential to the growing boy or girl as study, and in the schools work and play are so alternated as to double the number of children which the school buildings would ordinarily accommodate, one class working while another uses the playgrounds. Thus, with three school buildings, well over 3,000 children are fully provided for on full time.

The curriculum includes all the regular school subjects, as well as many others, including music and a number of sciences. A large auditorium is devoted to the study of history and geography, which are combined into one subject and inculcated with the assistance of lantern slides or moving pictures, visualization of scenes and events being made use of to attract interest and assist memorization. The same idea is employed in other studies, the room devoted to natural history, for instance, being equipped with a wide variety of stuffed animals and even with small live ones.

The range of vocational subjects taught runs from painting, carpentry, and iron work to accountancy and architectural draughtsmanship. Each subject is taught in a room with the proper equipment, there being a carpenter shop, paint shop, foundry, draughting room, etc., and each trade or profession is taught, not theoretically, but by practice. Teachers for these subjects are not chosen from college faculties, but are skilled workers in the different lines, and the students or apprentices to each trade make articles used in the school itself. This serves not only to reduce the cost of maintenance of the school but to give the pupils the interest in their work that comes from seeing the product of their skill in actual use.

Thus, the youthful carpenters make tables, chairs, desks, etc., that can bear comparison with high-grade factory products; the painters keep the schoolrooms and buildings

spick and span; the draughtsmen plan additions or improvements; the accountants keep the school books. In every case a concrete end is served to the benefit of the school and the pupil.

Nor is the female of the species forgotten vocationally. A kitchen and lunch room are run by the girls. Here they prepare palatable dishes and sell them to their fellow-students. Thus the young housewife gains actual experience in the most essential department of good housekeeping. Laundry work, sewing, and other feminine industries are similarly taught, besides stenography, bookkeeping, etc.

In that part of the school buildings and grounds devoted to recreation are to be found swimming pools, one for each sex, tennis courts, baseball diamonds, swings, slides, and other aids to enjoyment loved by and suitable to the young of all ages and both sexes. Instruction in play is just as thorough as in study. The recreation teachers devote their entire time to this work.

An excellent illustration of how the Gary educational system appeals to boys and girls is afforded by the story told the writer by a foreman in the mills of the American Sheet & Tin Plate Co., which has a large plant on the outskirts of the town. His story, told as nearly as possible in his own words, is as follows:

About two years ago, my nephew, left an orphan by the death of his mother, came from Pittsburgh to my care. I had been told that the boy was incorrigible, and would pay no attention to his studies; in fact, that he flatly refused to go to school. And it proved the information was correct. Arriving at Gary he would not even make a pretense at studying, and I practically had to use force to induce him to visit Prof. Wirt with me.

Arriving at the school the boy explained to Mr. Wirt that he did not consider himself in need of an education as his only ambition was to become a house painter. The Professor thereupon suggested that he come to school and learn how to paint, assuring him that he would not be asked to do anything he objected to. Naturally the boy, who was never so happy as when pottering around with a paint brush, accepted the suggestion.

The first day he was given a pot of paint and a brush and put under the care of a painter. In a short time he was fairly adept at laying on color. Then, one day, Mr. Wirt called him in and informed him that some of the classrooms were to be redecorated in several colors and that, in view of his progress, he would be put in charge of the job provided he could make a satisfactory estimate of its cost.

That was a stumper. The boy confessed his inability to estimate, and the necessity for a knowledge of mathematics being thus forced upon him, took up the study enthusiastically. Gradually he was brought to appreciate the advantage of other studies.

To-day that boy would miss his breakfast rather than be late for school. It would take a padlock and chain to keep him away from his studies. And so far as I can find out, he is taking pretty nearly the whole curriculum.

Prof. Wirt has been strongly supported in his methods by the Steel Corporation officials.

Gary is growing rapidly. Two Corporation subsidiaries, besides the Indiana Steel Co., already have plants there. These are the American Sheet & Tin Plate Co. and the American Bridge Co. The American Locomotive and American Car & Foundry companies both big railway equipment manufacturers, not connected with the Steel Corporation, are said to be planning the erection of plants in that vicinity. The Gary Screw & Bolt Co., one of several local enterprises, has a plant for making bolts, nuts, and screws, and employs 800 men.

No less than six trunk lines, the Lake Shore & Michigan Southern, Baltimore & Ohio, Wabash, Michigan Central, Pennsylvania, and Nickel Plate, connect with Gary. Smaller roads entering the town are the Lake Shore & South Bend Ry.; Gary & Southern; Gary, Valparaiso & Eastern; and Gary, Hobart & Eastern. The Elgin, Joliet & Eastern, a Steel Corporation road, has a large freight yard near the steel works.

A village in 1906, Gary is now a city of the second class, having attained that rank in April, 1915.

Citizens of Gary have always been ashamed of one thing

Interior of Gary School

about their town. This, appropriately known as the "patch" is a small section thrusting itself wedge-like into the heart of the city, and being full of saloons and dives. The site of the patch was not acquired by the Corporation, because of some question as to validity of title, so the big company has no power of restriction over its development. Gary men have long hoped that some means of cleaning up the section would be found. Prohibition seems to be doing it.

Away up in the northeast corner of Minnesota, on the shore of Lake Superior, is Morgan Park, another steel city, named after the great banker who financed the organization of the Steel Corporation. This town is one of the latest developments and contains many new and interesting features.

The engineers who laid out Morgan Park were able to use Gary as a model and to improve on that city in many respects, particularly as the demands on the new settlement in the matter of population would be much smaller than was the case at Gary and it was possible to develop the town along suburban residential lines.

Perhaps the most interesting feature of Morgan Park is the provision made for children. In no other town in the world are there as many playgrounds per capita. Each block has its own playground for small children, provided with swings, slides, sand piles, and so on, and thus the little ones in every part of the city are able to enjoy the advantages of outdoor play under the eyes of their parents and without their having to cross a street.

For older children and for such adults as still keep up personal interest in athletics there are many places where they may indulge in tennis and other sports, and these give the workers in the mills and their families greater and more varied opportunities for physical recreation than are enjoyed by the inhabitants of most larger and more pretentious cities.

To the visitor Morgan Park presents an unusually attrac-

tive aspect. The streets are all laid out in curves, beautifully parked, and the effect of this to the eye is entirely pleasing. Altogether, the physical aspect of the settlement is more that of the exclusive suburbs of some big city than what one ordinarily conceives to be a steel town usually associated with grime and smoke.

Like all the other Steel Corporation developments Morgan Park has a modern, thoroughly equipped hospital, Y.M.C.A. and other advantages above those which a city suburb usually boasts.

Morgan Park is really a suburb of Duluth and is part of that municipality. But while it is under the city government it enjoys the various advantages mentioned because of the direct influence of the Corporation which spends a large amount in beautifying the town, providing playgrounds, etc., and which keeps a corps of trained workers to promote welfare work of various kinds within its confines. Just as in Gary which, though a self-governing city, displays in all its activities the influence of the big corporation. J. P. Morgan, Jr., paid the total cost of the beautiful and commodious Y. M. C. A. building.

And throughout the State of Minnesota are a number of small towns which, in somewhat the same sense, may be classed among the Steel Corporation towns. That is, although self-governing municipalities they owe the majority of their improvements, such as hospitals, to the munificence of the Corporation which employs most of their inhabitants and sees to it that its employees shall have all possible opportunity for comfort and social betterment. Hibbing, Coleraine, Eveleth—all these are, in the true sense, steel towns.

One of the great problems that has faced the Corporation in building the towns or settlements to house its mill workers has been that of the bachelor, or the man who has come to this country to work leaving his family in Europe or elsewhere. A large percentage of steel workers belong to one or

other of these two classes, and it has been a difficult matter to devise a means of giving these men decent and respectable living accommodations with as many of the comforts of home as possible at a price within the means of the worker with his hands. In different communities different plans have been tried. In Morgan Park the Corporation erected large boarding houses with some of the advantages of a club but the success of these has not been as great as was hoped for.

Ellwood City, near Pittsburgh, where the National Tube Co. has one of its big seamless tube plants, probably comes nearer to solving this difficult problem than any other point. Here the Tube Company maintains what is really a men's hotel, with excellently kept bedrooms, club rooms, etc., rented at a cost of a few dollars weekly to the workers. The hotel, boarding house, or club, call it what you will, is located but a few steps from the big restaurant maintained by the company. Thus the boarding-house menu is avoided while the worker, tired out with his day's toil, is spared the necessity of a long walk for his evening meal.

Down below the Mason and Dixon Line conditions are considerably different from what they are in the North. In dealing with the white worker of Minnesota, Ohio, Pennsylvania, and other states the Corporation has sought to avoid anything that smacks of paternalism. It has simply provided the worker with certain advantages, leaving as much as possible to him the management of these. But in the South, with a large percentage of the workers colored, it has been necessary for the Tennessee Coal & Iron Co., the Corporation's southern subsidiary, to manage directly the affairs of the settlements of its workers.

Although among the smallest of the steel towns Westfield, Ala., is one of the most important from the sociological standpoint. It is a development devoted exclusively to the negro, its entire population being black, and it seeks to give the

colored worker who resides there advantages identical with those which his white brother enjoys elsewhere.

Situated in a little valley, amid rolling hills, the town slopes down from all sides to a big common, the most noticeable feature of which is a large and well-kept baseball park. Around this centre are grouped two excellent schools, community houses, and other buildings used as social centres, while, divided by winding roads, the well-built houses of the town straggle in all directions, half-hidden by the southern foliage, along the sides of the hills.

It need hardly be pointed out that a development of this character has a broad and important economic aspect. The negro constitutes a substantial percentage of the American population. In the South he predominates. But until now the negro has never enjoyed any advantages or the opportunity for social betterment. In Westfield he has such an opportunity and while, temporarily, the town must be managed by white brains it is almost certain that, in time, the negro residents of this delightful village will learn to manage their own affairs and will do so. And unless the writer misunderstands the spirit of the Steel Corporation, it will put every encouragement in their way to that very end.

Fairfield, Ala., but a short distance from Westfield, has been called the South's model industrial city, and also the "city of homes." Situated like the negro village, on softly undulating ground amid the luxurious southern foliage, the site chosen for Fairfield offered its builders an excellent field for achieving artistic effects in its layout, and they did not fail to make use of the opportunity. Like Morgan Park, although almost within a stone's throw of the steel mills, it presents the appearance of an exclusive suburb. Its well-paved streets are shaded by green trees through the leaves of which peep out the fronts of cosy-looking modern houses. Even the trolley cars running through its principal streets fail to disturb its peaceful charm.

To describe the many "steel towns" scattered all over the eastern half of the American continent would be impossible, as it would be to discuss the problems presented by local conditions in each case. Broadly speaking, the Corporation, wherever it has built to house its employees, has sought first of all the comfort and happiness of these workers and not its own gain. And it has always borne in mind that comfort and happiness are æsthetic as well as physical, and built accordingly. In the older steel centres the Corporation, as it has not built from the ground up, has naturally not been able to introduce into the communities as many basic improvements as has been possible in the newer developments. But it has in every case sought to improve existing conditions, always with the workers' comfort, health, and happiness as its goal.

The H. C. Frick Coke Co. has set itself the task of making attractive the coal-mining towns of the Connellsville region. By the usual corporation methods of sanitation, of making personal and community cleanliness easily attainable, it has raised very materially the standard of living in the coal towns, and the standard of management of the towns themselves. It has even managed to make many of these towns attractive —if the reader has ever been through coal-mining regions he will appreciate the size of this achievement—by encouraging gardening by means of prizes and so on, and by fostering community pride. It has set new community standards in the coal districts.

To the late George G. McMurtry must be given much credit for the movement for bettering conditions in industrial centres. Over 30 years ago Mr. McMurtry conceived and laid out a model city in the environs of Pittsburgh for the workers of the American Sheet Steel Co. The town laid out by the former head of the Sheet Steel Company will stand as a lasting monument to him, though it does not bear his name— Vandergrift, Pa., the first of the steel towns.

CHAPTER X

HUMANIZING INDUSTRY

OF ALL the problems with which industry is confronted none is more important or more difficult of solution than that of establishing proper and harmonious relations between the man who works with his hands and the individual or corporation who pays him his wage. Upon its solution depends to a large extent the settlement of the whole vast problem of capital and labor. And the proper treatment of the worker has been a question to which the management of the Steel Corporation has applied itself with energy almost since the organizationof the big company.

To claim for the Corporation complete success would be an exaggeration. The problem is one that has been growing ever since the dawn of the industrial era and obviously cannot be settled, if at all, without many years of effort and of mutual give and take. To expect any employer, or group of employers, to achieve immediate success in solving the difficulties that naturally arise between capital and labor would be absurd.

No one questions the right of the man who works with his hands to decent living conditions, a wage that will give him the opportunity to live with a certain degree of comfort and permit him to bring up his children decently. Most, if not all, modern employers recognize this right and are willing, even anxious, to accord it to the men in their employ. But it has been by no means easy to decide just what are the best steps to be taken to attain the desired ends. And, it must be stated regretfully, the necessary coöperation on the part of

the workers themselves is often lacking. There is often a tendency on the part of wage earners to regard with suspicion any steps taken for their betterment by employers.

It must be remembered that the industrial era is practically in its infancy still. It was naturally some time after the birth of the era that the evils it brought in its wake came to be recognized and steps could be taken to combat them. Today every sound thinker on economics realizes that the welfare of the industrial worker and of industry itself are inseparably associated, and that industry cannot attain its highest development unless the worker gets a fair share in its profits and an opportunity for self-development.

It is comparatively easy for the successful employer—that is, successful from a financial viewpoint—be he individual or corporation, to spend money with a view to improving the living conditions of his workmen. It is not an easy matter to do this in a manner that will preserve the self-respect of the worker. And it is of the utmost importance that this self-respect should not be injured in any way. Paternalism, or anything that looks like it, must be studiously avoided.

About the year 1906, the Steel Corporation initiated a campaign of Safety, Sanitation, and Welfare. The enormous success that it has attained in preventing accidents and deaths in its plants is easily demonstrable statistically. The benefits resulting from its sanitation campaign are also obvious to any one visiting the steel districts. It is not so easy to point definitely to the good results from the welfare campaign, but there is no question that they are more far reaching than either of the others. The greatest of the three is welfare.

The term "welfare" is used to include practically every activity designed to make life more livable for the worker and his wife and children. It includes education, housing, club activities, and a host of other things.

While the policy of the Steel Corporation in regard to im-

proving the living conditions of its employees is the same wherever the big company's subsidiaries operate, the methods adopted differ in each locality with the varying conditions presented. It would be impossible in the scope of this work to give details of the multitudes of courses adopted in the name of "welfare," but a few examples will serve to give a general idea of the work that is being attempted.

The greatest enemy of mankind is ignorance; hence the work that the Corporation is doing along educational lines may justly be regarded as the most important of its operations for ameliorating the workers' lot. It is not always possible for the Corporation to take direct charge of the education of the young, the children of its employees, nor does it wish to do this directly. But in those localities where municipal, county, or state educational facilities are poor, it has gladly assumed the burden. The most striking instance is the work conducted along these lines by its southern subsidiary, the Tennessee Coal, Iron & Railroad Co.

In fact, the work of the Tennessee Co. along all lines of welfare is particularly worthy of description. This does not imply any invidious comparison; it simply means that the southern company had a more virgin field to work on and therefore has been able to lay out a more comprehensive and definite programme.

But to return to the question of education of the workers' children. When the Steel Corporation, in 1907, purchased control of the Tennessee Coal, Iron & Railroad Co., it found conditions decidedly unfavorable, especially in two respects: education, and the treatment of the colored worker who constituted the major part of the common labor supply of that section.

The schools in Jefferson County, Alabama, where the mines and mills of the Tennessee Company are located, were in an exceedingly poor condition in every respect. The buildings in many instances were dilapidated and the inadequate pay

offered teachers failed to attract men and women competent to train the youthful mind.

After a thorough study of the situation, President George G. Crawford, of the Tennessee Company, took up the question with the county authorities and an arrangement was finally arrived at by which the company was to build and equip a sufficient number of schoolhouses in the neighborhood of its plants and mines. The county agreed to turn over to the company the annual appropriations for teachers' salaries in the neighborhoods affected, these sums to be supplemented by the company with an amount sufficient to pay the type of teacher which the company's officials desired to obtain.

As a result of this agreement there are to-day, in every place where the Tennessee Company operates, well-constructed, thoroughly ventilated, modern, and attractive schoolhouses for white and colored children, combined with the most modern equipment for teaching. The instructors in charge are of a high average type and the schools are recognized as having no equals in the South.

How successful the Tennessee Company's management of these schools has been is evidenced by the fact that when the Steel Corporation, through the southern company, began the erection of its big shipbuilding plant at Chickasaw on Mobile Bay, in the neighboring county of Mobile, the authorities of that county proposed to the company's officials that they enter into a similar agreement in respect to education in that section and a plan, in all essential respects the same, was drawn up and agreed to.

The educational work in the South is not confined only to children, whom it takes from kindergarten to the end of the grammar school period.

The schoolhouses are made centres for general community activities, or in some cases special buildings are erected for this purpose. The community work includes cooking, sew-

ing, housekeeping, and similar classes for the wives of employees, club and social activities, athletics, etc. An important function is the maintenance of libraries for workers and their families. The popularity of these libraries is growing rapidly and the type of literature demanded by those who use them indicates not only a desire on their part for self-instruction but an unexpectedly broad and intelligent interest in the problems and events of the period.

Before passing on from the South, let us take a brief glance at what is being done for the colored people of that section by the Corporation.

The negro has not heretofore had a fair chance in the South for bettering himself. The Tennessee Company has endeavored and is still strenuously endeavoring to give its colored employees an equal opportunity with their white brethren. Although separated, as desired by both whites and colored, the educational facilities it offers the children of the negro workers are identical with those afforded the youthful whites. The community activities are in all respects similar, and in fact, in every way the colored worker at the Tennessee plants and his family have just as much opportunity to live decently and to develop as the white.

At Fairfield, Alabama, the Tennessee Company maintains a hospital, recently erected, which, except in mere size, compares favorably with any institution of its kind in the world. The building, costing over $1,000,000, has accommodation for 334 patients, one half being for white and one half colored. The surgical equipment is the last word in modernity, and the wards and private rooms are splendid examples of good lighting and ventilation and the other factors that go to make a sick room comfortable. The roof of the hospital is a large esplanade where convalescent patients may in fair weather enjoy the southern air and sunlight and a view of miles of beautiful rolling country in every direction.

It is a far jump from Alabama to Minnesota geographically.

The educational and general welfare problems that confront the Corporation in the Northwest are essentially different from those it faces in the South. In fact, in the Northwest the Corporation's subsidiaries have nothing to do directly with education, which is in charge of the local authorities. The steel companies merely meet the bills through paying at least 85 per cent. of the taxes in the sections in which they operate. But their managements take a keen interest in the educational work being done, and though the taxes are heavy and the local authorities seem over-extravagant in their expenditures for education, the steel interests do not grumble. They take the attitude that even if taxation is heavy, it could not be for a better cause.

The small mining towns of northern Minnesota, which, as already stated, depend almost entirely on the Steel Corporation and other steel companies for their revenues, are profligate in regard to education. Their school buildings are imposing. It is not uncommon for a town of 1,000 or so inhabitants to spend three or four hundred thousand dollars for the erection of schools. In one instance at least a splendid garage is attached to the school building, and buses are maintained, giving the children free motor transportation, morning and afternoon, between their homes and the school. And teachers' salaries are high.

The Corporation's welfare activities are naturally restricted in this territory, due to the fact that the section is prosperous, and the workers there of a more independent, self-reliant type than those of the South. But the Corporation does all it can in the way of promoting healthful recreation and other similar social work such as club houses, the maintenance of hospitals, etc.

In another chapter of this volume the city of Gary, Indiana, and its scheme of education has been discussed at some length, and therefore it need not be taken up here. The Gary educational plan has been adopted in all essentials at

Morgan Park, where the Minnesota Steel Co. has its big plant.

In the older steel sections, such as Pittsburgh, Chicago, and Youngstown, the Corporation's subsidiaries coöperate as far as they may with the local authorities, in improving educational conditions. In all these sections a somewhat similar plan of welfare is carried out. In some locations, visiting nurses or domestic instructors are maintained at the expense of the company. In others, the Corporation maintains schools for teaching foreign workers the English language and American ideas and ideals. In every part of the country where any of the Corporation's subsidiaries has a plant no expense is spared to improve living conditions generally and to make up any local deficiencies for education and social betterment.

Housing of workers is another great problem that confronts industry. The Corporation, wherever its subsidiaries operate, has always endeavored to provide its workers with comfortable and sanitary houses at moderate rentals. So far has it gone in this respect that it is seriously open to question whether it has not overshot its mark and created new evils.

In the South, in the Connellsville region of Pennsylvania, where it gets the mass of its coal supplies, in Youngstown, Gary, Morgan Park, and other sections, it has built thousands of houses—the figure given as of January 1, 1920, is 17,553 dwellings and boarding houses—for rental at low rate to employees. The rents on these dwellings are so low that the average rental receipts are only about 1½ per cent. of the actual cost of construction. This is not enough to cover taxes and upkeep, let alone depreciation and a reasonable return on the investment. These low rentals are in effect tantamount to an addition to wages. The adverse side of them, however, is that they discourage private construction enterprise, which cannot hope to compete with the Corpo-

ration's rentals, and also remove all incentive to the worker to own his own home.

For years the subsidiary companies have constructed houses and sold them to employees on an easy-payment plan, but it was only recently that a general comprehensive plan was developed along these lines for all subsidiaries.

The housing plan varies slightly with the conditions of each case, but generally it permits employees to purchase or build a home on small initial payments, with installments running from ten to fifteen years, and with an interest rate of 5 per cent. on the unpaid balance.

How varied are the activities of the Corporation in regard to welfare work is illustrated by a list of the facilities constructed or installed for various purposes, as presented by Charles L. Close, manager of the Corporation's Bureau of Safety, Sanitation, and Welfare, at a meeting of the American Iron & Steel Institute in New York in May, 1920. The list was made up as of January 1st of that year. The following are some of the principal items: Number of dwelling and boarding houses constructed and leased to employees at low rentals, 27,553; churches, 25; schools, 45; clubs, 19; restaurants and lunch rooms, 64; rest and waiting rooms, 210; playgrounds, 131; swimming pools, 11; athletic fields, 96; tennis courts, 107; sanitary drinking fountains, 3,077; pipe systems for drinking water, 369; protected wells and springs, 647; comfort stations (complete units, either bath or dry houses, closets, wash or locker rooms) 1,495; showers, 2,672; clothes lockers, 116,749; base hospitals, 25; emergency stations, 286; company surgeons, physicians and internes, 167; outside surgeons on salary, 107; nurses, 189; visiting nurses, 68; teachers and instructors, 222; safety inspectors (spending entire time on safety work) 101; employees who have served on safety committees, 25,948; employees now serving on safety committees, 5,500; employees who have been trained in first-aid or rescue work, 16,801; employees now in training, 801.

Many of the above statistics are concerned principally with strictly sanitation and welfare work. While on the topic of statistics, however, it might be well to give Mr. Close's figures of the Corporation's expenditures on those activities that come under the operation of the bureau which he heads. These expenditures, from 1912 up to the end of 1919, are: Welfare, $11,751,429; Sanitation, $11,732,666; Accident prevention, $6,530,706; Relief for injured men and families of men killed, $22,652,238; cost of employees' stock subscription plan, $9,160,000; pension fund payments in excess of income, provided by permanent fund, $1,824,693; for creation of permanent fund, $8,000,000; total, $71,651,732.

A sum of $5,113,570 paid in pensions to employees, but derived from the fund originally established by Andrew Carnegie, is not included in the above total.

In organizing welfare activities the Corporation's officials work on the theory that it is infinitely better to help people to help themselves than to give them something that savors more or less of charity.

One department of the work that has met with encouraging success is the development of home and community gardens. Practically every worker has in the front or rear of his home a small amount of vacant land, but unless he is offered some incentive to cultivate this, he is apt to let it remain bare and serve for the accumulation of rubbish.

Realizing that such a state of affairs was not only a waste economically, but was inimical to the physical and mental welfare of the worker, a plan was evolved to induce him to cultivate these vacant areas. The offering of small cash prizes was found sufficient to give the necessary impetus to this work, and the result is that a great many of the workers' homes are now surrounded with flower or vegetable gardens to the cultivation of which the men and their families give much of their spare time. From a financial viewpoint these gardens are profitable to their cultivators, regardless of the

prizes offered for the best-kept ones. The mental and spiritual benefit derived from them cannot be measured, but there is little question that it far exceeds the financial gain.

In many localities, where housing conditions do not permit gardens, the Corporation's subsidiaries utilize unoccupied land in the mill district, plow the ground, plot it out, and then hand it over to the employees to cultivate, again with the incentive of cash prizes for the most successful results. Last summer more than 3,000 acres of land were thus utilized.

Many of these community gardens are made the especial care of the children, who take a great interest in the work and who often achieve results of which their elders might well be proud.

Children, in fact, occupy an important place in the welfare scheme. They are the workers of to-morrow, and every effort is made to permit them to develop healthy minds and sound bodies. Children's playgrounds are equipped and maintained in a great many mill centres, and instructors are employed to devote their whole time to assisting the children to get the best possible benefits from these. Many of these playgrounds have swimming pools, in some cases one for the older and one for very small children, with swimming instructors in charge, and a visitor in the summer needs only the evidence of his eyes to convince him that the little ones make regular and excellent use of them.

The care of the worker's health is one of the most important considerations of the Bureau of Safety, Sanitation, and Welfare. Sanitary measures are general in every mill. There is not a single plant of the Corporation but is equipped with modern facilities for washing, and experts in sanitation give their time to improving these methods whenever possible. Every suggestion that tends to diminish the risk of contagion or of diseases caused by unsanitary conditions, occupational conditions, etc., is adopted and there is a keen rivalry among the different plants to establish some new improvement

which the others lack. In almost every plant the visitor is shown some idea or contrivance in the way of sanitation with the boast that this was first used at that plant. All of which makes for a constant improvement in the health of the worker.

Drinking water generally is thoroughly purified and piped through the mills so as to be at all times easily obtained by the men. Cups, with their possibility of contagion, are eliminated. Fountains, with guards to make it impossible for the drinker's lips to touch the outlet, are substituted.

Most, if not all, of the comfort rooms maintained at the plants are equipped with shower baths and every workman has his private locker where he keeps soap, towels, and a change of clothes.

The results of these measures are not reflected only on the health of the men. The worker who is able at the end of a strenuous day's endeavor in a hot mill or a coal mine to enjoy a cool shower and leave the plant clean and comfortably dressed must necessarily be a more self-respecting member of the community than he who has to return to the bosom of his family grimed with the sweat and dirt of his day's toil, and his family also benefits, both in self-respect and comfort. It was a difficult job for the wife to maintain a pride in her home under the conditions that once existed in the steel districts.

Cleanliness is far-reaching in its results. It benefits not only those directly affected but the entire community.

There is one aspect of the sanitation work that is hardly obvious, but nevertheless important. America is the great melting pot of the races. History has shown that it normally takes several generations in the crucible to produce the out-and-out American. And cleanliness, probably more than anything else, is the birthright and symbol of the American. Many of the foreign races that flock to our shores are regrettably lacking in this respect, but they learn quickly.

Ore Cars at Proctor Yards

General View of Duluth Ore Docks

And the more quickly we can accustom them to the idea of the necessity of personal cleanliness the more speedily will they become real Americans and good citizens.

Which all harks back to the question of self-respect. The American is naturally self-respecting and independent. And his accustomed use of soap and water is no small factor in making him so. And the Corporation's welfare workers see to it that its employees shall never lack soap and water.

Incidentally, among the many activities of the Welfare Bureau is that of instruction for citizenship. This includes the teaching of the English language to foreign workers, instructing them in American ideas and institutions, and assisting them in obtaining their naturalization papers. Foreign workers' wives are instructed in American standards of housekeeping and in the proper care of their children, and every effort is made to encourage and assist the foreign-born worker to realize the opportunities that this country offers to all and to enable him to take advantage of them.

As the world grows older and wiser and civilization progresses, old ideas are being discarded one by one, and nowhere is this more noticeable than in the realms of business and industry. Principles of doing business, once held as cardinal, have in many cases later been recognized as immoral, not only from the human, but from the economic standpoint.

The old trading doctrine of *caveat emptor*, or "let the buyer beware," is no longer relied on by reputable merchants. They realize that the man who hopes to build up a sound, steady business must take upon his own shoulders the responsibility for what he sells both as a question of honesty and policy. Another principle which may be called "let the worker beware," one which laid down the law that the industrial worker was supposed to be cognizant of whatever risks were involved in his employment and to assume these risks himself, is gradually being legislated out of existence, compensation laws of recent years taking the burden of

the dangers of industrial employment off the shoulders of the worker and placing it where it rightly belongs, on the industry.

But the United States Steel Corporation did not wait for the law-makers to force upon it the assumption of this liability. Cheerfully and voluntarily, it accepted for itself the onus of accidents in its plants before a single state of the Union had passed a Workmen's Compensation Act.

More, the compensation relief plan for injured workmen, adopted by the Corporation in 1910, has served as a model for a number of states in drawing up liability legislation, and is more liberal in some respects than the plans of most, if not all, states.

Yet though the Steel Corporation, as evidenced by its action in putting its compensation plan in force, heartily approves of the theory of industrial liability legislation, the big company's management is strenuously opposed to certain forms that state legislation sometimes takes. One of these is state insurance, the objection being that this takes away from the employer all incentive to adopting measures for accident prevention. For compensation, after all, is not a cure but a palliative. It does not strike at the root of the disease; and in the final analysis, the important thing is the prevention of accidents rather than payment for them after their occurrence.

In this respect the up-to-date employer has gone much further than legislators. He has gone to the very heart of the industrial accident question by taking what means he could to eliminate, or at least to minimize, the risks incidental to the industry in which he is engaged. He subscribes to the slogan "safety first," safety even before profit, for he is beginning to realize that accidents are uneconomic and unprofitable, and that their prevention, even if apparently costly at the beginning, must pay in dollars and cents in the final showing. In other words, the modern employer of

labor is becoming convinced that safety methods, or insurance before accident, are as necessary as are measures to prevent fire instead of relying upon fire insurance companies to make good losses from conflagration.

Although individual effort to minimize industrial hazards had been made by some companies before the Steel Corporation existed—notably in the case of some of the very companies merged into the "Steel Trust"—the Corporation may with reason claim the distinction of being the real pioneer of the safety movement. For not only did it organize, systematize, and enormously expand the work of the several companies, but it championed the cause of safety, and trumpeted it to the industrial world.

Through its example, as well as by means of a vigorous campaign carried on by the Safety, Sanitation, and Welfare Bureau, it preached the doctrine of "safety first," a slogan originated by the Illinois Street Co., to all. The largest employer of labor in the world, by its adoption of such a policy, forced the recognition of this policy upon industry generally, and as a result of the safety campaign inaugurated by the Corporation in 1906, safety-first methods and appliances are generally employed in every steel mill in the United States to-day, and, in fact, by a vast number of plants devoted to other industries, and they have spread and are still spreading to other countries.

The results of the work of the Corporation's Safety committees are at the disposal of whoever cares to avail himself of them. A Safety Museum is maintained at 71 Broadway, New York, the Corporation's executive headquarters, and from this centre the work of promoting safety radiates to every part of the industrial world.

Further, the efforts of the Corporation have resulted to a great extent in educating the worker to expect and demand that every reasonable precaution be taken to protect him from pain and injury, his family from the loss of its head

and wage-earner, in teaching him to seek safety for himself and to recognize the right of his fellow-workmen to it.

From the aspect of liability, accidents may be divided into two broad classes as recognized by law—injuries due to the worker's own carelessness, and those attributable to the negligence of his employer. But the Steel Corporation, in its accident relief plan, which supplements its safety work, makes no such distinction. It recognizes only that the worker has been temporarily or permanently prevented from earning a livelihood, or that his family has suffered, and it compensates for the loss without question as to where the blame lies.

In order to secure the best results, economically and otherwise, from its safety campaign, it was obvious that the mere setting up of safety guards, warnings of danger, etc., was not sufficient. It is just as necessary that the worker should be taught to take advantage of the safeguards provided him, to regard the seeking of safety as a duty he owes to himself, his family, and his fellow-workmen. In its campaign for the prevention of accidents the Corporation has sought to accomplish both these ends, and the educational work has been by far the most difficult.

How much so may be gathered from the fact that after many years of instilling the doctrine of safety into the workmen, investigation showed that nearly 50 per cent. of all accidents occurring in the Corporation's mines or plants were indisputably traceable to indifference or thoughtlessness on the part of the men themselves. The worker is inclined to regard with something of disdain the risks incidental to his occupation. Often he deems it rather cowardly to seek to avoid these risks. Indifference to danger is too often accepted by the thoughtless as a hallmark of personal courage, and indifference to the dangers of one's employment as a sign of experience and skill. Just as a small boy will jump on a moving car to "show off," the worker will often incur

unnecessary risks for the same reason. A railroad man will board a moving engine from the middle of the track simply because to do so seems to indicate that he is past the apprentice stage. It is to such causes that a large percentage of industrial accidents are due, and the employer of labor, in instituting a safety campaign, generally finds that the greatest problem he faces is to persuade the worker that such indifference to danger is childish, and that real skill and efficiency lie in doing things in the correct, which is synonymous with the safe, way.

The Corporation's safety work may be divided into three parts: organization, safety devices and danger warnings, education.

It goes without saying that to get the best results in any campaign, efficient organization is essential. The Corporation has organized a central Safety Committee under whose charge the general work of prevention of accidents falls. Each subsidiary company has its own Committee on Safety, and there are further sub-divisions into sub-committees at each mill or mine. It is the duty of the sub-committees to see that all safety rules are obeyed, and to make suggestions for furthering the cause of accident prevention, while the main committees receive and act upon these suggestions and attend to the financial and other aspects of the campaign. For the prevention of accidents costs a good deal of money, the Corporation having expended, from 1906 to 1919, about $11,000,000 in this work alone. But the necessary funds are never stinted. Judge Gary's promise that the Finance Committee would recognize any practical step undertaken for reducing the risk of injury to the workmen, and would vote the wherewithal to pay for it, has been scrupulously kept.

So as to bring home to every worker the safety idea, the personnel of the sub- or mill-committees is constantly changed with the view that each worker will sooner or later take part in the promulgation of safety. Figures already

quoted show that 101 inspectors spend their entire time on this work, 25,948 employees have served on safety committees, and 5,500 were thus serving at the end of 1919. This practice of changing the members of the mill committees, more than anything else, educates the men to think safety for themselves and for others.

Installation of devices designed to make accidents impossible, or at least extremely improbable, on machines that had previously been prolific causes of injuries to workmen, was naturally the first work of the Safety Committee. It was the obvious step. The educational campaign came later, as it became evident to those engaged in the work that the saving of the worker from injury lay largely in his own hands. Once this was recognized, the educational work was taken up enthusiastically, and to-day forms the most important side of the "boost-for-safety" campaign.

Print and paint are used liberally to keep the idea of caution before the mind of the worker at all times. Safety warnings are painted here and there in conspicuous places in the mills and mines, and at the entrance to many plants there are big display signs, electrically illuminated at night, on which changing mottoes serve constantly to impress the idea on all and sundry. Blank walls, pay envelopes, and all available spaces that may be printed or painted on are impressed into the work.

A million dollars, in round figures, is spent annually by the Corporation in the erection of safety appliances. The men are encouraged to suggest ideas for the prevention of accidents of however trivial a nature and these are all given careful consideration, and the records show that something like nine out of ten of them are used. The safety workers have adopted this motto: "Not only is an ounce of prevention worth a pound of cure, but it is better to have a pound of prevention than an ounce of cure."

So numerous and varied are the safety devices that have

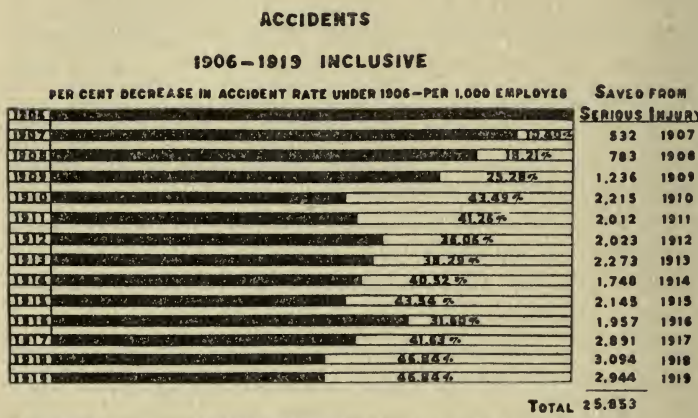
been developed over the course of years that it would be impossible to describe them in detail. They run from guards on the handles of wheelbarrows, to prevent fingers being crushed in passing through a doorway, to appliances for derailing cars in danger of collision; guards over exposed flywheels, belts, and other moving parts of machinery; enclosed ladders to prevent falls; goggles to safeguard workers' eyes from explosion of metal or flying chips, and subways under railway tracks to eliminate the danger of crossing the rails in a busy yard.

Although a workman who invents a marketable safety device may secure a patent on it if he desires, the Corporation itself never patents, being only too glad to put at the disposal of other employers every means it can to assist them in eliminating accidents. Its management holds that the safety campaign, while good economy, is largely humanitarian, and should not be commercialized.

For several years past the Safety Committee of the Steel Corporation has been trying to make the safety idea universal, and it has put into use a danger signal which has been adopted by a number of industrial organizations in this country. This signal is a plain red ball, innocent of lettering. It is pointed out that this sign, speaking no language and therefore speaking all tongues, can, by educating the worker of the world, be made understandable everywhere and at all times, and will therefore be especially serviceable in promoting safety among foreign workers. The adoption of the red ball of safety was urged upon the International Convention for the Prevention of Industrial Accidents which was held at Milan some years ago, and it has been accepted and put into use by such organizations as the American Iron & Steel Institute, the National Metal Trades Association, National Association of Manufacturers, as well as by a large number of railroads and manufacturing concerns of one kind or another.

The satisfactory results of the safety-first campaign are

demonstrable statistically. Taking 1906 as a basis, this being the year of its inception, the number of serious or fatal accidents in 1918 and 1919 was reduced 46.84 per cent. notwithstanding the fact that the figures for recent years include a number of accidents that were classed as minor injuries in 1906. The following chart speaks for itself.



In fourteen years a total of 25,853 men saved, by educational work and by the taking of precautions, from serious injury, many or them from death. Probably two-thirds of the number had wives and children, and so some seventeen thousand families were saved from sorrow, from the loss of or injury to their heads. But this is not all. The figures represent the saving accomplished in the mines, mills, and so on, of the Steel Corporation itself. No account can be obtained of the number of men employed by other steel companies, or in other industries, who, by reason of the example set by the Corporation, were saved from death or loss of limb.

And the safety campaign is yet in its infancy. The men who are devoting themselves to it look forward to the day when the only accidents that shall occur will be those that may be said truly to be unavoidable, and the number of men killed or injured in industry will have been reduced to a minimum.

A concrete example of the results of the safety programme is afforded by comparing the figures for accidents in the coal-mining industry in the United States and other countries with those in the Corporation's mines.

DEATHS PER MILLION TONS PRODUCED

	1915	1916	1917	1918	1919
Scotland	3.35	4.32	4.03	4.55	
South Wales	5.84	5.51	6.72	6.48	
Great Britain	4.38	4.39	4.70	5.24	
United States	4.27	3.77	4.14	3.80	4.24
H. C. Frick Coke Company	1.75	1.89	2.20	2.38	2.81

TONS COAL PRODUCED PER DEATH

Scotland	298,342	231,627	248,266	219,870	
South Wales	171,174	181,634	148,822	154,312	
Great Britain	228,402	227,807	212,652	190,998	
United States	234,297	265,094	241,618	262,873	235,918
H. C. Frick Coke Company	567,098	528,735	493,188	419,758	363,844

N.B. Figures for Frick Coke Co. (United States Steel) and for United States apply only to underground workers. Figures for other countries include workers above ground where casualties are lower.

Has the Steel Corporation really gained from its large expenditures for safety work? That it has secured returns in the way of loyalty and increased efficiency can hardly be doubted; but has there been any tangible monetary saving? The economy in the matter of compensation payments saved is sufficient to answer this question. A careful calculation made several years ago by the Safety Bureau showed that had the same number of accidents occurred in the three years, 1911–1913, as occurred in 1906, when the safety campaign was organized, the big company's disburse-

ments, as a result, to the injured workmen and their families would have been several millions of dollars more than the entire amount expended in safety work. The aggregate saving to date would probably run well into the tens of millions.

The gain in production that is derived from increased safety in manufacturing processes is also an important financial consideration. In the first place, every accident means a more or less prolonged interruption, possibly a complete though temporary cessation of operations, with a consequent loss. Next, it means that a new man must be trained to fill the place vacated by the injured worker. It will be a happy day for industry when every employer realizes that the injury of a workman is as harmful, from the viewpoint of profits alone, as a breakdown of a piece of machinery. The human machine is no less important than that made of steel or wood. And safety appliances are insurance against the breakdown of that machinery.

It is the first step that counts. Once started on the job of saving the employees of the Corporation itself from injury and mutilation the ambition of the men in charge of this work extended and reached out through the steel trade, then to other industries and finally to other countries.

Strictly speaking, safety should be classified under the general head of "Welfare." But in practice a distinction must be drawn between what may be considered the plain duty of the employer to prevent needless accidents—a duty to the workmen and a duty to himself—and the work that reaches out and, by bettering the worker's lot generally, benefits his family and the community in which he lives.

Work of this character grows of its own impetus. It is doubtful if the Corporation's management, when it first outlined its propaganda for helping employees to lead happier and healthier lives, realized how far afield it would be carried, how many different activities the work would come to include.

Each step accomplished suggests another and often a

bigger. As the welfare campaign progresses its workers become imbued with enthusiasm, make more demands upon the Corporation's finances to carry out their ideas. And so the welfare programme has taken on a broad scope, has a wide horizon, and will have a still wider one as the years roll by.

Those in charge of the welfare and safety work, whether at the mills or at the Corporation's headquarters, do not claim, nor for that matter do any of the Corporation's officials claim, that the work is entirely altruistic. They are perhaps rather too inclined to emphasize its importance purely from the efficiency standpoint. It is impossible to judge motives, and generally those behind any course of action are more or less mixed. The outside observer, however, studying the operation of the Safety and Welfare movement, and noticing the enthusiasm of those engaged in it, cannot but be convinced that the deeper motive behind it is an unselfish one. The consideration that the employer benefits financially from the health and happiness of his employees is there, but it occupies a decidedly secondary place.

It is difficult, perhaps impossible, to demonstrate statistically that welfare work, as distinct from safety work, is financially beneficial to the employer; that the Corporation has received any tangible return for the large sums it spends yearly to give its workers the opportunity to lead cleaner, healthier, happier, and broader lives. But no work thus done can fail to give the doer a return, full measure and overflowing.

The stock subscription plan, discussed in the early part of this work, is in reality a part of the welfare programme. It has a two-fold object: that of creating a direct personal interest on the part of the worker in the Corporation's affairs, and that of encouraging thrift among the men and women employees, setting their feet on the first rung of the ladder of success.

All welfare work, in the end, whether it be the salvation of the worker from accidents, the teaching of individual or

community hygiene, the care of the sick, financial compensation for the injured, the teaching of languages, trades, sciences, or the inculcation of thrift, has for its object the making of better men and women, the giving to the worker born under unfavorable social conditions the opportunity to lift himself above these conditions. And from this both the employer and employed must benefit together.

But every other consideration aside, welfare work had paid in the satisfaction that the management and the stockholders of the great industrial enterprise feel in the knowledge that they have given the man who works with his hands, not in the Corporation alone, but industry generally—for where U. S. Steel leads, others follow—better working conditions, cleaner homes and communities, and better educational facilities for their children. In the satisfaction of knowing that, by this work, better citizens are being made, and finally, in the realization that it has helped to bridge the chasm that separates capital from labor.

Sooner or later the time must come when it will be recognized that what is known as "welfare work" is a simple duty that industry owes to labor. If it is not freely accorded, the working man will eventually demand that his work and his home be surrounded with those conditions, tangible and intangible, that make for decent citizenship, for self-respecting manhood.

If industry as a whole, as the Steel Corporation has already done, will recognize without compulsion these rights it will go a far way toward smoothing out the differences that exist between capital and labor, toward eliminating radical agitation and Bolshevism. It must offer this practical recognition of the workers' rights as evidence of its claim that the real interests of the man who works with his hands and of him who pays him his wage are identical.

Welfare work is the humanizing of industry. It may prove the salvation of industry.

CHAPTER XI

INVESTIGATIONS AND DISSOLUTION SUIT

ON MARCH 1, 1920, the Supreme Court of the United States handed down a decision acquitting the United States Steel Corporation from the charge of the Government that it was a combination in restraint of trade, bringing to an end litigation that had cost both the Corporation and the Government many millions in cash and had for nearly nine years thrown a threatening shadow on the steel industry and on American business as a whole.

The decision, moreover, wrote the final chapter to a record of investigations of and political attacks against the Corporation that had lasted almost since its organization.

An immensity from its conception, an undertaking so vast that its actions and policies, good or ill, reflected their results for the industrial weal or woe, not of a single community but of the whole American people; conceived and born, further, at a period when the thoughts of the nation were directed toward the menace that was believed to exist in trusts against the body politic and when politicians and economists were bending their energies toward a study of the question of big business, it was but natural that investigations of one kind or another, but all directed toward the one end of finding out whether the big company's existence was a danger to the country or not, should have played an important part in the history of the United States Steel Corporation.

While United States Steel, its actions and its policies, have earned the commendation of thoughtful students—perhaps even the majority of the public, and many public

speakers and writers have expressed this, probably no other organization has enjoyed or been subjected to so much—and generally such unconsidered—criticism as has the Steel Corporation. Even the Standard Oil and the American Tobacco companies, big and prominent as they were and as much as they have been attacked for their methods of eliminating competition, have failed to strike the public imagination as forcibly as the so-called Steel Trust. There were two main reasons for this. To the mind of the student of economics the activities of the Steel Corporation bore more importance to the public welfare because of the part that steel plays in making or unmaking the prosperity of the country, the importance of iron as one of the resources of the nation. The steel trade is the industrial barometer of the country and this is because steel enters into almost every line of activity. So far as the public was concerned the very size of the Corporation constituted its weakness. Its billion-dollar capitalization captivated the imagination, compelled attention. What men do not understand they are apt to fear, and how many can understand the import of such a vast sum? As the majority opinion of the U. S. Supreme Court says:—"The Corporation undoubtedly is of impressive size and it takes an effort of resolution not to be affected by it or to exaggerate its influence."

And because it was so easy to inflame the public imagination with the very mention of the "Steel Trust," the Corporation became a shining mark for the attacks of demagogues who recognized in it an excellent net for snaring votes.

This does not mean that all the attacks on the big Corporation have been the work of demagogues. Some have been originated by men entirely sincere in their conviction that so great an enterprise was inherently dangerous to the well being of the country at large. But it was generally overlooked that the power to do harm implies an equal power to

work good, and the question resolves itself in the final analysis to an individual one. What were the powers of the Steel Corporation and how were they used? The investigations, ending in the suit for the dissolution of the "Steel Trust" and its absolution by the Supreme Court, have brought to the light of day all the actions of the big company, have submitted them to the glare of pitiless publicity, and the vast industry has been judged not alone in the courts but at the bar of public opinion. What have been these investigations, why were they instituted and in what have they resulted?

On June 18, 1898, an investigation into the question of trusts and their relation to labor and, in fact, their effect on the country generally, was decided on by resolution of Congress. A committee, known as the Industrial Commission, was appointed to make the investigation. This commission was composed of five members of the Senate, five members of the House of Representatives, and nine others, assisted by a large corps of experts in economics. The committee did not finish its work until the later part of 1901, its report being presented on December 5th of that year. So that the Corporation began its existence during the life of the commission and came in for a certain amount of study on its part. As the report, generally speaking, was an academic one and as it dealt very little with the Corporation, it may be passed over here.

The first investigation bearing directly upon the methods or practices of the Steel Corporation was begun during the administration of President Roosevelt. James R. Garfield, appointed Commissioner of Corporations in the Department of Commerce and Labor when the department was instituted early in 1903, was instructed by the President to investigate various large corporations and in the course of this work he directed his attention to the steel trade. About 1905 Mr. Garfield began an investigation of the Corporation and the work was carried on until some years after he had

resigned his post and become a member of the Roosevelt cabinet.

The report of the Commissioner of Corporations on the steel industry was made by Herbert Knox Smith, who held the post under President Taft.

Approximately two years were spent by Mr. Garfield in this investigation. Some years later, testifying under oath, he stated that the management of the Corporation had put no obstacle in the path of the investigation, but that on the contrary Judge Gary had ordered that all information he demanded be given. Further, Mr. Garfield said that the head of the big company had asked him to inform him if anything contrary to law was discovered during the investigation as it was the desire and intention of the management to meet the law fully and to correct any abuses if they existed. Mr. Garfield, apparently, could find no cause of complaint, for he reported to the President that he had discovered nothing that necessitated that the Department of Justice be informed with a view to instituting proceedings.

Further, Mr. Garfield declared, in questioning competitors of the Corporation, steel consumers, and railroad traffic managers, he had found no indication of the crushing of competition which would have been revealed by complaints of competitors as they had been in the case of other "trusts," no signs of discontent among consumers, and no evidence of rebating, used by some big concerns as a powerful weapon in eliminating competition.

On July 1, 1911, the report of Mr. Smith was submitted, through Secretary of Commerce and Labor Charles Nagel, to President Taft. Mr. Smith's report was an exhaustive and complete study of the Corporation. One may find fault with his conclusions, but the work is without equal as a compendium of facts and statistics regarding the Corporation.

In some respects the Smith report was unfavorable to the Corporation, although the Commissioner made no claim

(*Upper*) Ore Boat Unloading
(*Lower*) An Ore Train

Ore Boats at Duluth Docks

of suppressed competition. His criticisms were leveled principally at the big company on the two points of over-capitalization and the matter of the Hill ore lease.

Mr. Smith claimed that the tangible assets of the Corporation at the time of its organization were $682,000,000 against which $1,400,000,000 of securities were issued. At the end of 1910, he said, tangible assets had increased to $1,187,000,000 and securities issued to $1,468,000,000. As already pointed out Mr. Smith's calculations did not allow fully for ore property values, worth hundreds of millions.

The reader will remember that, in an earlier chapter, it was pointed out that the over-capitalization of the Corporation did not admit of doubt, an assertion proven by its practical admission by the management of the Corporation who put $500,000,000 of earnings into new construction for no other apparent reason than to equalize capitalization and property values. Yet Mr. Smith's figures appear somewhat too drastic. Some of the reasons for this belief have been stated before, but it is pertinent to point out that, in the 1910 valuation, Mr. Smith indicates that the main point of divergence is that of ore reserve values, and on this point it would be safe to say that the mass of opinion in the steel trade, that is the mass of competent observers, would support the Corporation's figures.

That Mr. Smith's criticism of the Hill lease was well taken seems to be proven by the decision of the directors to abandon the lease, although another reason for this action was to be found in the gradual decline in the metallic content of the ore as operations proceeded. Yet the question as to whether the undertaking of the lease was intended, as Mr. Smith thinks, to keep out competitors, or merely to secure a safe ore reserve for the Corporation, must always remain a matter of opinion. As the Corporation's entire history fails to indicate a desire to crush or to keep out competitors, it appears only fair to give it the benefit of the doubt in this instance. On one

point, however, the lease is open to criticism; it seems to have been an error of business judgment.

But the work of the Commissioner of Corporations was being done quietly, and in the meanwhile the public were being kept keenly interested in the trust question and politicians were waging active war against the trusts. The evidence brought out in the Standard Oil and Tobacco suits served to inflame public indignation against big business generally and "Hit the trusts!" became almost a shibboleth for political advancement. It was no wonder, then, that the "Steel Trust" should be criticized and it should be questioned why no action had been taken against it, the obvious answer that it had not violated the law being one which would hardly have satisfied the masses and certainly one that politicians were not going to advance under the circumstances. Public sentiment on the trust question, moreover, was being kept at fever heat by a certain class of publication, and it was small wonder that so rich an opportunity was seized upon by politicians. On May 4, 1911, a resolution, proposed by Representative Augustus O. Stanley, of Kentucky, calling for an investigation of the United States Steel Corporation, was introduced into the House and passed, and a committee of congressmen headed by Mr. Stanley was appointed to undertake the work. The other members of the committee, which became known as the Stanley Committee, were:

Charles L. Bartlett, of Georgia, Democrat; Jack Beall, of Texas, Democrat; Martin W. Littleton, of New York, Democrat; D. J. McGillicuddy, of Maine, Democrat; Augustus P. Gardner, of Massachusetts, Republican; Henry G. Danforth, of New York, Republican; H. O. Young, of Michigan, Republican; John A. Sterling, of Illinois, Republican.

The committee shortly began its work and in the course of its investigation summoned as witnesses the heads of the Corporation and of various independent steel companies, experts in economics, consumers, and a host of other witnesses.

The greatest publicity was given to these hearings, but the Corporation, although practically put on trial, could not avail itself of the usual recourse of a defendant, could not call witnesses on its own behalf.

On August 2, 1912, the Stanley Committee presented its report, or rather reports, for there were several. The majority report, signed by Messrs. Stanley, Bartlett, Beall, and McGillicuddy, was a sweeping condemnation of the Corporation, its organization and its methods. This was a matter of little surprise as the entire method of conducting the investigation was sufficient to convince the unprejudiced mind that the effort of the investigators was not so much to find out whether the Corporation had been influential for good or evil but to prove that it was actually a violator of the law.

Practically everything the Corporation ever did was condemned in this report. Among the items that came for particular criticism were over-capitalization, the bond conversion plan, the Hill ore lease, the Union-Sharon purchase, the Gary dinners, the Tennessee purchase, the Corporation's attitude toward labor unions and toward labor generally, and interlocking directorates.

According to the report the Corporation played an important and dangerous part in influencing legislation, particularly in helping to disseminate literature in favor of a high tariff. The letters produced in support of this charge, however, do not seem to be very convincing proof, indicating that no means other than perfectly legitimate ones were used to assist in maintaining the tariff on steel products, the necessity for which all steelmen were agreed on.

In regard to the purchase of the Tennessee Coal, Iron & Railroad Co., the Stanley Committee asserted unequivocally that George W. Perkins, a Morgan partner and a member of the board of directors of the Steel Corporation, deliberately attempted to precipitate a run on the Trust Co. of America with the purpose of forcing the interests

in control of the Tennessee company to sell. The details of the deal and the events connected with the run on the trust company have been discussed in the chapter devoted to the Tennessee purchase.

On the question of interlocking directorates the majority of the Stanley Committee expressed their grave apprehension of its menace to the country and pointed out that the Corporation, through its directors, had representation on the boards of railroads capitalized at $10,265,000,000; banks and trust companies whose capital, surplus, and undivided profits aggregated $3,315,000,000; industrial concerns capitalized at $2,803,509,000; and express, steamship, and terminal companies capitalized at $2,272,000,000.

Finally, the committee demanded that the railroads owned by the Steel Corporation be segregated from it as a matter of public necessity, the ownership of these roads giving the Corporation a great advantage over competitors.

A minority report, signed by Augustus P. Gardner, Henry G. Danforth, and H. O. Young, concurred with the main report in some particulars but suggested that the majority had singled out incidents to bolster up its arguments without regard to their relative unimportance, the result being an overdrawn picture of the iniquities claimed to have been perpetrated by the Corporation. While the second report unequivocally condemned the organization of the Corporation as an attempt by the Morgan interests to eliminate competition against the steel companies in which they were concerned and to do away with the ever-present menace that Andrew Carnegie was supposed to be, it said that the actual control of the actions of the great combine had been put into the hands of "exceedingly competent, although perhaps not altruistic, managers who have subsequently made it a success."

The minority report also pointed out that significant fact that the price of steel, as based on a representative list of

products, had declined from $38.80 a ton before the Corporation was formed to $36.11 in 1911.

Finally, the minority members did not favor the dissolution of the Corporation, merely contenting themselves with the suggestion that it be put under Federal control. Incidentally, such control over all corporate activities has been frequently urged by Judge Gary, head of the Corporation.

This did not end the list or reports as Representatives Young and Littleton each appended his personal views, both of which were favorable to the Steel Corporation in many respects.

A year or more after the presentation of the Stanley Committee reports some interesting events calculated to throw a new light on the causes that led to the inception of the investigation transpired. A man known as David Lamar (an assumed name on his own confession), one who bore so unsavory a reputation in financial circles that he was styled "The Wolf of Wall Street," came forward with the assertion that he himself had written the Stanley resolution for investigation and had used it, or attempted to do so, as a club over the heads of the Morgan interests. This failing, he had sent the resolution to Stanley through Henry B. Martin, secretary of an association called the Anti-Trust League, and the Kentucky congressman had introduced it into the House.

Lamar's story was confirmed by Martin and by Edward Lauterbach, a New York lawyer. It was followed by a denial on the part of Stanley who pointed out that the resolution was offered originally by him in 1910, a year before the time of its passage upon its second introduction, whereas Lauterbach had said that Lamar showed him the resolution in 1911. The record of the Senate committee which heard the Lamar evidence, however, shows that Lauterbach stated he hadseen the resolution as early as 1908, or thereabouts, and that he thought it had been offered to the House in 1910.

Upon a suggestion from a senator, who apparently was not cognizant of the fact that the resolution had been presented unsuccessfully a year before its passage, that it did not come before the House until 1911, Lauterbach corrected his date. Under the circumstances this correction was natural, although the original testimony was the more reliable.

However ignorant Stanley might have been of knowledge of Lamar's authorship of the resolution, and however sincere his motives in bringing it before Congress, the connection of "The Wolf of Wall Street" with the matter, which seems fairly conclusively proven, was in itself sufficient to give a sinister aspect to the whole investigation, to suggest that its inception was the result of base motives.

Following the Stanley investigation came the Government's Steel dissolution suit. That the one grew out of the other is easy to believe. In fact, it would be difficult to think otherwise. The United States Steel Corporation had been organized, had done business, and prospered under successive Republican administrations. It had been investigated by the governmental departments charged with such work but these had failed to find sufficient evidence to warrant the bringing of a suit against the big company. The Stanley resolution was passed by a House controlled by a Democratic majority and the measure had been applauded by a large body of voters who had been taught to believe by their political advisors that all big business was necessarily evil. The Republican Party was facing grave danger of defeat in the coming elections of 1912 and the advantage the investigation had gained for the Democrats among the class of voters referred to could only be offset, it seemed, by a political "grand-stand play" of the same nature. Here, again, we come to a question of motives, but all the evidence obtainable seems to show that this was at least one of the reasons why, on October 26, 1911, the Attorney-General for the United States, George W. Wickersham, caused to be filed at Trenton

a suit for the dissolution of the United States Steel Corporation.

It cannot be said that the suit surprised any one. The country at large had long wondered why no action had been taken against the Steel Corporation; why this great combine alone seemed to be immune from attack by the Federal authorities. Those unfamiliar with its conduct and policies and knowing it only as the biggest of the "trusts" could attribute the immunity only to political influence, while those better informed, although believing that the Corporation's entire history had been such as to render attack futile, all violations of the law having been carefully avoided by it, and that the Corporation was not a monopoly in restraint of trade, felt that the force of popular opinion must sooner or later result in a suit.

In the Government's charges were reiterated practically the same complaints found against the Corporation in the Stanley report; and a complete dissolution was asked for. The Corporation replied denying in toto all the charges and asserting its innocence of any violation of the Sherman Anti-Trust Act.

Jacob M. Dickinson, former Secretary of War in the Roosevelt cabinet, was put in charge of the prosecution, assisted by Henry E. Colton. An imposing array of legal talent was lined up on the Corporation side, its counsel including Joseph H. Choate, John G. Johnson, Francis Lynde Stetson, Richard V. Lindabury, Cordenio A. Severance, David A. Reed, and Raynal C. Bolling. The actual conduct of the case was principally in the hands of Messrs. Lindabury, Severance, and Reed.

Hearings before a Special Examiner were ordered and these began in New York early in 1912. Many months were consumed in the hearing of testimony on either side, and it was not until the spring of 1914 that the last of the witnesses was examined. Among those called to testify were former

President Roosevelt; prominent steel men like John A. Topping, E. C. Felton, Joseph G. Butler, Willis L. King, Charles M. Schwab, James R. Bowron, Frank S. Witherbee, W. H. Donner, A. F. Huston, Edwin R. Crawford, A. W. Thompson, Karl G. Roebling, James A. Campbell, C. W. Bray, W. W. Lukens, John Stevenson, Jr., and a host of others; prominent economists like Professor Jeremiah Jenks and Dr. Francis Walker; financiers like Oakleigh Thorne, of the Trust Co. of America, George M. Reynolds, and others; directors of the Corporation including Judge Gary, James A. Farrell, J. H. Reed, Percival Roberts, Jr., Daniel Reid, and so on, not to mention a vast array of railroad purchasing agents, heads of large steel-consuming companies, and many others among whom may be mentioned James R. Garfield and Lewis Cass Ledyard.

A large part of the testimony was devoted to events far preceding the organization of the Corporation, it being the intent of the government counsel to show that not only was the Corporation restraining trade but that the very elements of which it was composed, the companies absorbed by the great merger, were themselves organized in violation of the law. As the hearings progressed the conviction that the Corporation would emerge from the ordeal of prosecution successfully became more prevalent, the evidence, to the lay mind, all supporting its denial of any violation of the law. The witnesses called for the defence were unanimous in declaring that the big company, far from restraining competition, had fostered it, and this point, in effect, was the very nub of the matter. Even the witnesses for the prosecution, many of them, took the same attitude.

It was in listening to this testimony, or the greater part of it, that the writer conceived the idea of recording the history of the great Corporation. Here was a mass of data, the sworn statements of prominent and reliable business men, a foundation that could not be excelled for a work of this

character. From this mass of evidence, in large part, have been taken the facts stated in this history. The records in the dissolution suit, in fact, contain the whole story of the Corporation up to the year 1911. Hence it would be vain to review in detail all the testimony here.

The arguments of counsel for both sides were presented to the U. S. District Court, and for months the business world waited anxiously for its decision, one that would have a very far-reaching effect not on the Corporation or the steel trade alone, but on business generally. For it was felt that a decision adverse to the defendant would mean that mere bigness was considered illegal and that no large corporate enterprise would be allowed to exist, however free from evil its course of action might be. If the Steel Corporation was adjudged a monopoly in restraint of trade, it was thought, then all big business was doomed, for the Corporation, certainly, had sought in every way to meet fully the requirements of the law.

It was not until June 3, 1915, that the Court rendered its decision, the most favorable to big business ever handed down in an anti-trust suit, denying the petition of the Government and completely absolving the Steel Corporation from the charge of monopoly. The decision was unanimous, all the judges being in entire agreement that the Corporation was not, and never had been, a monopoly in restraint of trade.

All four of the judges concurred on the main point at issue —that of trade restraint. A minority opinion, signed by Justices Woolley and Hunt, expressed some divergence of thought on minor points, which we shall come to. In the meantime, let us examine some extracts from the main opinion, signed by Judge Buffington, presiding, and Judge McPherson.

"As trade is a contest for it between persons and the gain of that trade by one means the loss of it to another, it follows

that the person who best knows whether the man who gained it gained it fairly, is the man who lost it. If there is monopoly we can find proof of it from business competitors."

"For of the conduct of the Steel Corporation, the views of its competitors are the best gauge. Monopoly and unreasonable restraint of trade are, after all, not questions of law, but questions of hard-headed business rivalry, and whether there is monopoly of an industry, whether trade is subjected to unreasonable restraint, whether there is unfair competition, are facts about which business competitors best know and are best qualified to speak. And it may be accepted as a fact that where no competitor complains, and much more so, where they unite in testifying that the business conduct of the Steel Corporation has been fair, we can rest assured there has been neither monopoly nor restraint. Indeed, the significant fact should be noted that no such testimony of acts of oppression is found in this record as was given by the competitors of the Tobacco or Standard Oil companies in the suits against those companies. We have carefully examined all the evidence given by competitors of the Steel Corporation. We have read the testimony of customers who purchased both from it and from its competitors. Its length precludes its recital here, but we may say its volume, the wide range of location from which such witnesses came, and their evidently substantial character in their several communities, make an inevitable conclusion that the field of business enterprise in the steel business is as open to, and is being as fully filled up by the competitors of the Steel Corporation, as it is by that company."

Next the Court turns to "that most injurious feature of monopoly's wrong to the public, to wit, increase in the price of its product or a deterioration in quality." It disposes of the question of quality first thus:

"No dispute arises under the proofs. They are simply uniform that, both with independents and the Steel Corpo-

ration, there has been a steady bettering of quality in steel products."

The question of prices it discussed at some length and intimated that there had been no evidence presented to show that the Corporation had unduly raised prices, while a large number of steel consumers had agreed in testifying that active competition in prices for steel existed between the Corporation and the independent companies, which would alone indicate that prices had been only such as ordinary business practice warranted. The Court added: "The Steel Corporation has adopted a policy of price publicity and adherence, somewhat analogous to the freight-rate stability followed by the railroads under the directions of the Interstate Commerce Commission."

Next the Court considered the subject of restraint of trade in the export or international field and found that: "we are warranted in holding that the foreign trade of the Steel Corporation, its mode of building it up, and its retention when built up, are not contrary to the Sherman Law. To hold otherwise would be practically and commercially to enjoin the steel trade of the United States from using the business methods which are necessary in order to build up and maintain a dependable business abroad, and if the Sherman Law were so construed, it would itself be a restraint of trade and unduly prejudice the public by restraining foreign trade."

On the charge that the inherent nature of the Corporation was monopolistic, that the object of its organizers in bringing it together was for restraining trade the Court says, in part:

"In view of the fact that the proportionate volume of competitive business has increased since the Steel Company was formed and that the proofs show no attempt by it to monopolize it to the exclusion of its competitors, to now attribute to those who formed the Corporation an intended monopolization would be to say that, having formed the

Corporation for the purpose of monopoly, they immediately abandoned such purpose and made no effort to accomplish it."

The Court disposes of the matter of the purchase of the Tennessee Coal, Iron & Railroad Co., and of other purchases of steel properties criticized by the Government, by saying: "We cannot but feel, in the light of the proofs, that they were made in fair business course and were, to use the language of the Supreme Court in the Standard Oil case, 'the honest exertion of one's right to contract for his own benefit unaccompanied by a wrongful motive to injure others.'"

Perhaps the most important point of divergence between the two opinions lies in the fact that Justice Woolley, with whom Justice Hunt concurred, held that it was the original purpose of the organizers of the Corporation to restrain trade. These judges found, however, that the big company did not attempt to exert a power, if it possessed it, to destroy its competitors; they say: "Upon the finding that the Corporation, in and of itself, is not now and has never been a monopoly or a combination in restraint of trade, a decree of dissolution should not be entered against it."

In denying the petition for a dissolution of the Corporation the Court stated that it would, if requested by the Government, retain the bill of complaint to restrain further action of this sort by the defendant corporation.

Metaphorically, business drew a sigh of relief when the decision of the lower court was made public, a relief, however, chastened by the expectation that an appeal to the Supreme Court was certain. But so clear and unmistakeable were the findings of the District Court, so little question seemed there to be in the minds of the judges, that no evidence of monopoly or restraint of trade existed that the final issue was awaited with confidence.

An appeal was filed in course of time—October 28, 1915. And for long thereafter both sides girded their loins for the

final effort. The case was eventually argued before the Supreme Court on March 7-14, 1917, and later the Court ordered a re-argument, the date for the re-argument being set for May of that year.

Meanwhile, the war that had been devastating Europe for three years had at last reached out to the United States and this country had become engaged in a conflict in which the industrial resources and financial strength, to say nothing of the patriotism of the Steel Corporation, were of enormous value and assistance.

Doubtless the Government's attorneys realized this fully. Doubtless they were aware that, if the Court should grant their plea and the Corporation be dissolved, the breaking up of the great organization would so disorganize its activities that it could not continue, during the dissolution process, the tower of strength it was in carrying on the war. So, on the ground, well taken, that the conclusion of the suit might disrupt the financial situation, the Government asked for and obtained a postponement, although opposed in its plea by the Corporation which was anxious to clear itself before the world as early as might be.

And so it was not until after the return of peace, eight years after the suit was initiated, that final arguments were presented (October 7-10, 1919) and not until March 1, 1920, that a final decision was rendered, absolving the Corporation and dismissing the suit, as already stated.

The Corporation's victory in the Court of Last Resort was a rather narrow one, four of the judges agreeing on dismissal of the Government's appeal, while three favored the Government's side. Two members of the Court did not sit in the case and took no part in the decision, Justice McReynolds, who had been Attorney-General of the United States during the progress of the litigation, and Justice Louis Brandeis.

The judges voting for affirmance of the judgment of the lower court dismissing the bill were Justice McKenna, who

delivered the opinion, and Justices Holmes, Van Deventer, and Chief Justice White, while the minority opinion was written by Justice Day and concurred in by Justices Pitney and Clarke.

On the question of the close division of the Court it might be pointed out that, of eleven (excluding Justices McReynolds and Brandeis who took no part in the matter) judges who sat on the case, four in the District Court and seven in the Supreme Court, a total of eight were in favor of the Corporation.

Compared to the opinion of the lower court that of the Supreme Court, considered either as a literary effort or a comprehensive summing up of the issues involved, is somewhat disappointing. A few pertinent facts were emphasized by Judge McKenna, however, and these are well worth alluding to.

Referring to unanimous testimony of both competitors and customers that the Corporation's trade methods had been not only legal but essentially fair and, if the word may be used, sportsmanlike, as contrasted with the Government's claim that competitors were oppressed, Justice McKenna said:

"The situation is indeed singular, and we may wonder at it, wonder that the despotism of the Corporation, so baneful to the world in the representation of the Government, did not produce protesting victims."

So obviously beneficial to American industry had been the Corporation's activities in the export trade that even the Government's attorneys did not attack it on this score, in fact, they suggested that the export organization should be preserved. On this point the Supreme Court majority opinion said:

> We do not see how the Steel Corporation can be such a beneficial instrumentality in the trade of the world and its beneficence preserved, and yet

be such an evil instrumentality in the trade of the United States that it must be destroyed.

And in concluding the opinion:

We are unable to see that the public interest will be served by yielding to the contention of the Government respecting the dissolution of the company or the separation from it of some of its subsidiaries; and we do see in a contrary conclusion a risk of injury to the public interest, including a material disturbance of, and, it may be serious detriment to, the foreign trade. And in submission to the policy of the law and its fortifyng prohibitions the public interest is of paramount importance.

In the final paragraph we have the nub of the whole matter. The dissolution of the Corporation would have been contrary to the public interest. Its preservation distinctly was in the public interest not only from a foreign trade or other economic standpoint but on purely sociological grounds.

Not satisfied with the decision the Government's attorneys shortly afterward moved for the reopening and rehearing of the case, but this appeal was promptly and unequivocally denied by the Court, thus definitely and finally settling the matter.

To the management of the Corporation, and particularly to Judge Gary, who was responsible for, and had accepted the responsibility for, its actions good or bad, the decision was more than gratifying. Its effect was not merely sentimental, however. The decision, freeing the Corporation from the stigma of illegality and, by inference, endorsing its policies, left the big company at liberty to develop and expand within the legitimate lines it had always followed.

For nine years the Corporation had been hampered by the shadow that was hanging over it. It was prevented from engaging in new enterprises that might have been favorably considered by its directors as any plans for future development might at any time have been brought to nothing

by an adverse decision. It is yet too early to see any direct result of the new freedom, but it is a safe presumption that, now enjoying it, the Corporation will not fail to make use of it for the financial gain of its stockholders and for the economic good of the United States.

A Trainload of Ingots in Molds

Ingot on Way to Rolling Mill

CHAPTER XII

QUESTIONS OF POLICY

ALMOST since the date of its organization the activities of the Steel Corporation have been guided by a definite set of policies. At the beginning, when the Corporation was going through what might be described as its "tooth-cutting" period, this was, perhaps, not the case, as there was, as suggested elsewhere in these pages, a lack of concordance on its Board on many questions, particularly in regard to relations with competitors, with employees, and the general public. But the policies advocated from the very beginning by the chairman eventually were accepted in full by all concerned, and they have for many years ruled the Corporation's actions

Broadly speaking, the Corporation's policies might be divided under five heads—relations with competitors, prices, publicity, relations with employees and, finally, with stockholders.

No better proof can be offered of the wisdom and success of the big company's methods of treating its competitors than the fact that, in its hour of trial, when the Government of the United States was seeking to disintegrate it, its competitors, the men who met and fought it for industrial success, came forward practically in a body to its defense and testified that its dealings with them and with the public had always been fair and honorable.

The era that preceded the birth of the Corporation was one of unrestrained, bitter, and often unfair, competition in the steel trade. Too many manufacturers then worked,

to paraphrase a well-known piece of advice, on the principle of: "Sell steel, honestly if you can, but sell steel."

But the management of the big company had the foresight to realize that a new day was dawning and, to help to make the morning of that day brighter, it adopted the policy of candid treatment of competitors, the principle of coöperation. Possibly its motives were not entirely altruistic. The Corporation itself benefited, as appeared later, from its course of action. However this may be, it sought to make friends rather than enemies of its competitors.

In this it had no easy task, for the trade had too long been used to fear gift-bringing Greeks, to view with suspicion every unhostile act of a competitor, to believe that business could possibly be done on the higher plane adopted by the new consolidation. "Live and let live" was then unknown in business, or, at least, in the steel trade. But gradually the fears alluded to were overcome and the steel trade changed, or its methods did.

The Steel Corporation was an evolution, the natural result of the integration in the industry that had been going on for many years. In it were concentrated into a single organization all the processes of steel making from ore mining to the manufacture of the most highly finished products of all kinds, including transportation. And the evolution was not merely a physical one. The new company stood for development along the lines of modern thought of business methods and practices.

It was a fortunate thing that the Corporation from its organization had as its chief executive officer a man farsighted enough to see that so vast an enterprise must avoid unfair practices and methods that, even if fair legally, were hardly so morally, if it would live itself; a man with sufficient acumen to realize that the Corporation's very strength contained the germ of weakness, and to guide it clear of the dangers to which it might otherwise easily have fallen prey.

In formulating its policies governing competition the Corporation had a difficult course to steer. The laws governing the actions of big business in the United States were by no means clear and for that matter, are not so to-day. On one side was Scylla and on the other Charybdis. To obey the law, the Corporation was bound to engage in active and sustained competition with other steel makers; at the same time, it had equally to refrain from any act which might be interpreted as an attempt to take advantage of its great size and resources and to overdo this competition.

In endeavoring to avoid the legal rocks, the Corporation, perhaps naturally, did not meet with the most complete success. Indeed, to do so would have been impossible, as there is no true middle course between competition and coöperation—the best that can be hoped for is a compromise.

It is interesting to note that the Government, in attacking the great company, charged it with doing both the apparently forbidden things, drawing from the Supreme Court the suggestion that these charges were paradoxical and presented contradictions. Said the Court: "In one, competitors (the independents) are represented as oppressed by the superior power of the Corporation; in the other, they are represented as ascending to opulence by imitating that power's prices, which they could not do if at disadvantage from the other conditions of competition." And the Court naturally asks, respecting competiton: "Are the activities to be encouraged when militant and suppressed or regulated when triumphant, because of the dominance attained?"

This same idea was suggested by Judge Gary in his testimony before the Stanley Committee, where he said:

> It has seemed to me that the Sherman Law, so-called, has two different provisions that, in their application, are more or less antagonistic one to the other. One provision is against monopoly and the other is against restraint of trade. If one manufacturer should undertake to enter into any combination or agreement, expressed or implied, to fix prices, to restrict output, to

divide territory, it would be considered an arrangement in restraint of trade and inimical to that provision. On the other hand, except for some basis whereby destructive competition could be avoided, whereby the old methods of doing business under which, as you probably know, a few only of the steel companies were allowed to survive and do business, and a large majority were wrecked; if we should enter into that kind of competition, it would mean that a large percentage at least of the manufacturers of steel would be wrecked; and that would secure to the survivors, to a greater or less extent, a monopoly; and our effort was to find a position between those two extremes and what we have done has been open and aboveboard, whether right or wrong. We have met and laid our business on the table, so to speak, telling one another frankly and freely just what we were doing, and while that has not maintained prices, that has not prevented a good deal of cutting by different ones at different places and times; while it has not controlled the business in any sense of the word, yet it has had a very steadying influence, and has prevented the destructive competition to which I have adverted. That is the frank and honest statement of facts, whether they are justified or not.

In its answer to the Government's charges, the Corporation claimed that, far from restraining competition, it had fostered it, and the majority of its competitors themselves swore to the truth of this defense. The United States District Court, before which the suit was first tried, pointed, in summing up, to facts and figures of the growth of competitors which fully and completely substantiated the Corporation's claims. These figures showed that the Corporation's business from 1901 to 1911, in which year the suit was brought, had increased over 40 per cent., but that in the same time the Bethlehem Steel Co. had shown a gain of 3,780 per cent. in business, the La Belle Iron Works of 463 per cent., Jones & Laughlin Steel Co. of 206 per cent., the Cambria Steel Co. of 155 per cent., the Colorado Fuel & Iron Co. of 153 per cent., the Republic Iron & Steel Co. of 91 per cent., and the Lackawanna Steel Co. of 63 per cent., to say nothing of the rise and expansion of entirely new companies, such as the Youngstown Sheet & Tube Co., during the same period.

For many years, ever since the period of consolidation in manufacturing and other industries began, big business had been viewed with suspicion and something of hatred by the mass of the people—and by no means without cause, in many instances. There was no question that the powers that controlled more than one great industry used their resources to crush competition and, too often, their money and influence for political ends. No argument is necessary to convince the unprejudiced mind that such acts were inimical to the good of the nation. It was perhaps natural that the stigma that attached to some as a result of this was used by demagogues and others, often sincerely enough, against big business in general as an aid to themselves politically. In short, "Smash the trusts" was for years the great vote-getting slogan, and unfortunately, is so still to some extent.

Small wonder then that the Steel Corporation, the largest and most powerful of all the so-called "trusts," was a shining mark for these attacks. Small wonder that the man in the street, looking to his leaders for guidance in such matters, was easily persuaded that the giant company was necessarily a menace to the body politic.

Apparently this it was that Judge Gary foresaw when he insisted that the organization at whose helm he stood must so conduct itself in all its dealings with competitors and the public that it could at any time show clean hands; could prove that its power had been used not destructively but constructively for the good of all affected by its actions—and this means the entire population of the United States. He has said publicly either in a public address or when testifying that these policies were justified on two grounds either of which is sufficient, namely: first, because they are right, and secondly, because they will pay in the end.

He evidently saw that the very life of the Corporation depended upon this; and time has proved the accuracy of his judgment. It is safe to say that had the Corporation mis-

used its power it would have been picked out many years before it was for legal attack, and the attack would have been successful. The Corporation would not have been in existence to-day.

To the lay mind, it is passing strange that the so-called "Gary dinners," which provided the principal example of the Corporation's attitude toward its competitors and the public, should have been made the subject for special attack by the Stanley Committee and the Government's attorneys, and should have been criticized by the Lower Court. However, the Court's criticism appears to have been based largely upon a technicality, as the judges in their opinion practically admitted that there was no intent shown on the part of Judge Gary or his associates to restrain trade by these functions. In fact, the criticism seems rather to have been based on certain meetings held in Pittsburgh as a result of these dinners, but at which meetings the head of the Corporation was not present.

Judge Woolley, who rendered a separate opinion, said of these dinners:

> The first Gary dinner was given on November 20, 1907, to meet an unquestioned exigency arising out of the panic then existing. . . . The dinner was given in order to devise ways and means to prevent calamity to the [steel] industry. Ways and means were found which, no doubt, contributed greatly in preventing disaster not alone for the producers of steel but also to those intermediate consumers who were carrying large and costly supplies. The ways and means consisted then of nothing more than the urgent request of a strong man that in the stress of panic all should keep their heads, and avoid the consequence of reckless cutting of prices. In this the others acquiesced, and in the light of the emergency then existing and of the disaster averted, I am of opinion that the purpose and conduct of those who participated in the first Gary dinner were not unlawful, improper, or questionable.

In view of the notoriety that these functions had received and of the use that had been made of them against the

Corporation, it may be worth while to devote a little time to them here.

The Gary dinners! Feasts that will rank in the business history of the United States as did the feasts of Lucullus in epicureanism or Cleopatra's dinners to Antony in romance. Occasions where the heads of the steel companies of the United States gathered at the festive board with amity and good will, to consider and discuss a situation that threatened not themselves alone, but the country at large; where these Titans of industry, only a few years before mortal enemies, met as friends and openly and without fear discussed with one another the intimate details of their businesses.

It was right after the first great shock of the panic of 1907. The country was still trembling from the effects of the great financial disaster, and no man knew surely whether the worst had been passed, whether financial and industrial chaos had been staved off, or not. The storm clouds had not passed away, and the men engaged in the steel and iron business, truly called the barometer of trade, having on more than one previous occasion—many of them, at least—seen a similar situation lead to years of distress and of prolonged industrial depression and unemployment, in a word to what the trade knew as soup-house days, had especial reason to be fearful of what the immediate future held for them and the concerns with which they were associated.

Nor were these panic fears confined to the steel giants alone. In fact, the smaller manufacturers, the jobbers and the retailers, having generally smaller resources, were in much worse case. Most of these latter were piled up with heavy stocks of steel which they had purchased during the boom in the earlier part of the year, and a sudden drop in steel prices would have meant not alone the wiping out of all hope of profit, but certain bankruptcy for a large percentage of them.

To the head of the biggest of the steel producers, then, all

eyes were turned. Judge Gary was deluged with letters from all quarters asking him to use all his power and influence to help weather the financial tempest. Naturally, it was very much to the interest of the Steel Corporation, as well as of other steel manufacturers, to do all that was possible to prevent the failure of the steel middlemen. Not only would bankruptcies have meant the drastic cutting down of accounts due, perhaps their total loss in some cases, but each failure would have meant the loss of a customer. These things the steel men knew from past experience.

One thing above all others seemed to be needed, the great essential in panic of every kind—that those concerned should keep their heads, should remain cool and face the danger steadily, and with the strength of unity. A leader was needed, and a strong one, and Judge Gary, head of the Steel Corporation, was looked upon to assume the post, which he did. To Judge Gary it seemed that the first and essential step was to bring the steel producers together and to explain the situation to them, pointing out that the only hope of salvation was in coolness and unity.

So he wrote a letter to practically all the large steel producers inviting them to a dinner at the Waldorf-Astoria, in New York, on November 20, 1907. The response was unanimous, and on the evening of that day there gathered around the table in the ballroom of that hotel the representatives of concerns producing more than 90 per cent. of all steel made in America, as well as the representatives of some Canadian companies.

At the proper time the host explained the object of the meeting. What he said can best be related in his own words:

> I stated the purpose and object of the meeting were if possible to prevent the demoralization of business. I stated that the first object of the meeting was to secure a better acquaintance with each other, and come into close contact in order to know one another, hoping that we might deal with

and toward one another as gentlemen and not as enemies. That the purpose was, if possible, to prevent demoralization of business, to secure as far as practicable stability of business conditions, as opposed to wide and sudden fluctuations; to prevent, if possible, failures on the part of our customers and to comply with their wishes in every respect; to prevent, if we could, a long continuance of the panic, which meant failures to a great many people and manufacturers themselves, because of their debts at the banks or because of their commitments for extensions, and to customers because of the large stocks they had on hand, the sudden change in the prices of which might be very damaging; and so far as we properly could, to maintain, or to assist in maintaining, business conditions generally, the opposite of which should be deplored.

* * * * * *

I stated distinctly . . . at that time that, as they all understood, we could not make any agreement, expressed or implied, directly or indirectly, which bound us to maintain prices or restrict territory or output; it must leave us free to do as we pleased, and must rely upon a disposition of all others to do what they considered fair and right, and for the best interests, not only of themselves, but all others who had any interest in that or any other work. I made that perfectly plain.

Judge Gary's remarks made a profound impression, and his hearers unanimously agreed to adopt the means he suggested for obviating the worst of the panic dangers. Resolutions creating a general and several sub-committees were made and passed and the meeting adjourned, subject to call.

Following this dinner similar sessions were held in January, April, May, and December of 1908. The December feast was the last of the Gary dinners proper, although some meetings were held subsequent to that time.

Were prices fixed at the Gary dinners? Let us settle this point as it was one of the chief things charged against the Corporation in the Government suit, and is the question on which the ethical morality of the holding of these dinners rests.

At the first of the Gary dinners the host explained that the fixing of prices was forbidden by the laws concerning

restraint of trade, and that nothing could or should be done which would not conform in all ways to the law. Yet it is plain that the effect of these dinners was to stabilize prices for steel. It does not appear that there was any definite agreement between the different interests represented as to what quotation they should ask for their products, but it is obvious that the mere statement, between gentlemen, that one intended to adopt a certain course in regard to prices tended to influence his colleagues to follow a similar course. It must be suggested, nevertheless, that there was never any question of restraint, as all were free to act as they saw fit, and it seems that on some occasions there was not even absolute agreement. At the worst the participants at the Gary dinners stretched the interpretation of the law a little to do a great right—the financial salvation of the steel industry, which, remember, was, and still is, the leading industry of the country.

What was the result of the Gary dinners? Simply that, whereas in previous panics gravestones of steel producer and middlemen had been numerous, not one important failure in the trade was recorded as a result of the 1907 panic. There is no question that this was due to the leadership of the head of the Steel Corporation.

Early in 1909—on February 18th—another meeting of the steel leaders was held, this time taking the shape of a luncheon. This occasion, in a sense, was the formal breaking up of the Gary dinner programme, as it was then that Judge Gary, satisfied that several of his competitors had departed from their intention to maintain for themselves respectively stability of business and prices, announced that the Steel Corporation would in future "go it alone." That it would get what business it could and would not divulge its affairs to competitors. This was followed by the so-called open market in steel which sent prices down to a very low level.

And here might be inserted an interesting fact. Orders

were sent out to the various sales managers of the different Corporation subsidiaries that they were to go after business and get all they could, orders particularly welcome to those who had longed for the flesh pots of Egypt, the old Carnegie methods, and who believed that the big company could force its competitors to the wall by such a course. A vigorous campaign for orders followed, both on the part of the Corporation subsidiaries and the independent companies, but the result went largely to prove that the big company did not have the power which its enemies claimed it had, of crushing competition. In the words of Colonel H. P. Bope, vice-president and sales manager of the Carnegie Steel Co., and a graduate of the Carnegie steel school, the result of the 1909 sales campaign was a disappointment to him, the Corporation failed to cut into its competitors' business, losing a little to them in some lines as a matter of fact.

There was yet another dinner to come. On October 15, 1909, the steel makers of the United States and Canada joined together to honor the man who had first called them together during the stirring and dangerous panic times two years previous. The leader of the movement was Charles M. Schwab, and many of the most prominent men in the trade made speeches in honor of the guest of the evening. It was, as Mr. Schwab said, "the first time when the heads of all the big concerns in the United States and Canada had gathered to do honor to a man who has introduced a new and successful principle in our great industry."

T. J. Drummond, vice-president of the Algomah Steel Corporation, in his address defined this principle as the doctrine that "what is good for my competitors is good for me."

Referring to the Judge Gary leadership in the trying times the trade had passed through Mr. Drummond said: "Always the voice of our leader rang strong and clear, 'Steady, boys, and play the game.' And by the Lord, you played, and played it fair."

A beautiful cup of gold was presented to the Judge by his steel colleagues at this, the very last of the Gary dinners.

The question of price restraint, or the Corporation's influence in maintaining or depressing the price of steel, is suggested naturally by that of price fixing at the Gary dinners. This question is one seriously affecting the Corporation's existence, being interwoven closely in that of the treatment of competitors. Getting down to basic facts the principal objection of the man in the street to trusts or monopolies is that the securing of unchallengeable power by one concern in any industry is likely to lead to higher prices or lower quality, either of which would swell the profits of the monopolistic corporation and would harm the public. It is therefore important to consider the Corporation's general policy in the matter of prices.

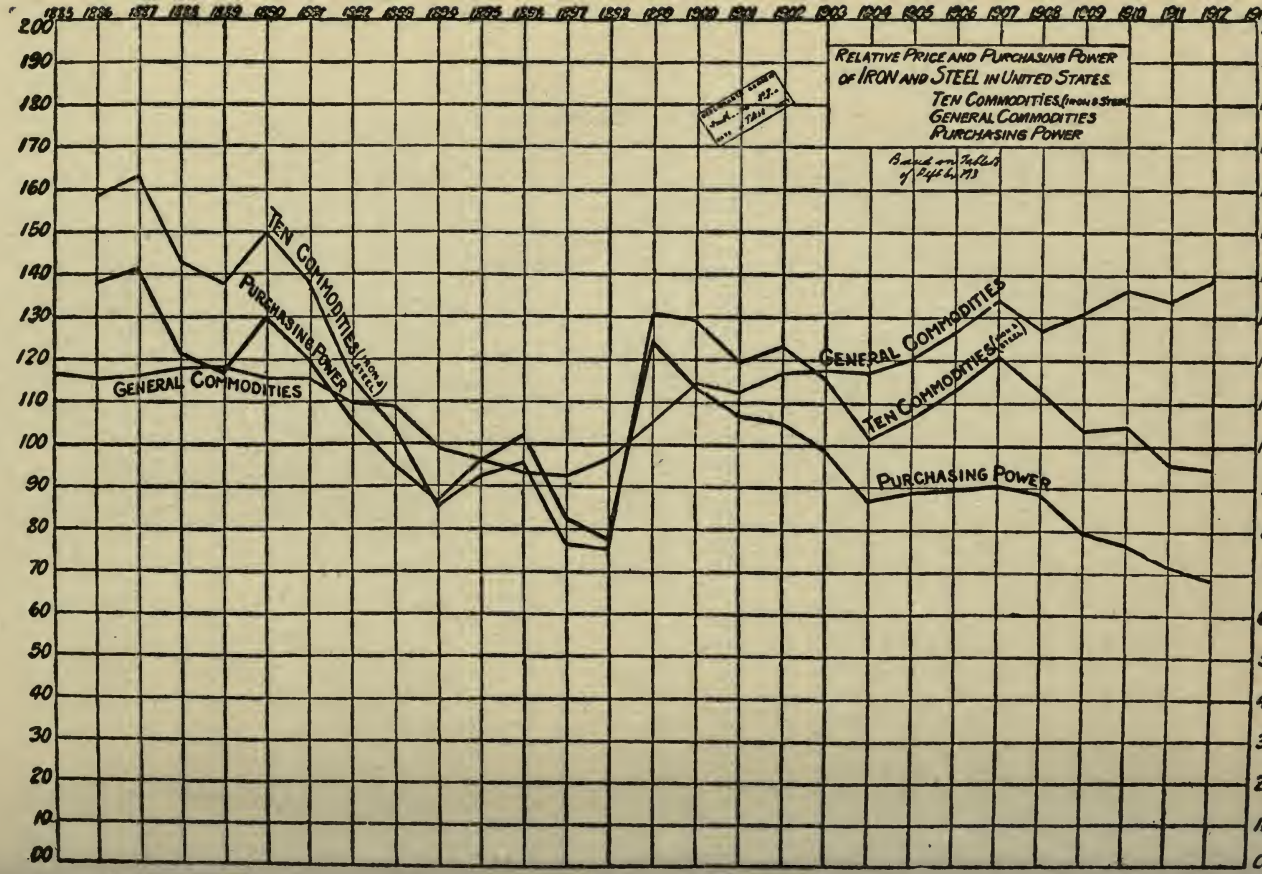
During the Steel dissolution suit a number of competitors and of steel consumers testified that the big company had always endeavored to "steady" prices, a fact evidenced by the very holding of the celebrated dinners. That it had always been the last to advance, and was equally loath to reduce. They agreed, however, that the steadying influence was brought to bear, not to keep prices at levels where enormous profits could be reaped, but rather at such quotations as gave the manufacturer only a fair and equable profit on his investment, evidenced by the fact that the Corporation, unlike many of its competitors, fixed an approximate high-water mark for prices in boom times, and made no attempt, in fact refused to sell above these, although they were much lower, to use a phrase made familiar in the old days of railroading "than the traffic could bear." These witnesses also asserted that the tendency of prices since the birth of the Steel Corporation had been downward and finally that the quality of the product, and these were men qualified to know whereof they spoke, had been appreciably bettered.

In its decision the U. S. District Court pronounced itself

as satisfied that the Corporation did not have the power, even if it wanted to, to force prices to an abnormal level. The Court found it proven that steel prices could not be advanced arbitrarily above the level quoted by any important competitor in the field, and that the so-called independent companies were themselves too large and too powerful to be forced to the wall by the methods that have been employed by some "trusts" to secure monopoly.

Regarding the question of the course or tendency of prices the testimony of Professor Jeremiah Jenks is particularly illuminating. Professor Jenks, whose reputation as an economist is world-wide, verified and explained charts previously put in evidence showing that the purchasing power of steel, the real price obtained by what is known as the index system, recognized by economists as the best test of price fluctuations, had decreased decidedly between the date of the organization of the Corporation and the time of the steel suit, as compared with a similar period before the birth of the Corporation. The same table showed that apart from the economic test and merely on the basis of actual prices received the average prices of steel and iron in the same period had declined slightly between the same periods.

From all of this evidence the observer must conclude that the policy of the Steel Corporation has not been to inflate prices or to depreciate quality, and that it has been its endeavor to give the consumer the best steel possible for the smallest amount of money compatible with decent profits. Incidentally, the lower prices of steel shown by Professor Jenks's charts were made in the face of advancing wages amounting altogether to more than 27 per cent. And labor forms the most important item of expense in steel making. The chart on opposite page 230, a copy of one of those testified to by Professor Jenks, is illuminating and needs no explanation.


RELATIVE PRICE AND PURCHASING POWER OF IRON AND STEEL IN UNITED STATES.
TEN COMMODITIES, Iron & Steel
GENERAL COMMODITIES
PURCHASING POWER
Based on Table of page 4, 1913
TEN COMMODITIES (Iron & Steel)
PURCHASING POWER
GENERAL COMMODITIES
GENERAL COMMODITIES
TEN COMMODITIES (Iron & Steel)
PURCHASING POWER
1835 1836 1837 1838 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 00

Conditions in the steel trade at the time this is written, October, 1920, provide a striking commentary on the Corporation's attitude respecting prices. But to understand them one must go back about eighteen months.

In March, 1919, the President of the United States, desiring to bring about a deflation of the high prices for all commodities that had prevailed during the war, created an Industrial Board to take charge of the matter and urged manufacturers in all industries to coöperate. Because of the immense importance of steel in the country's economic life the steel trade was selected to set the example of deflation, and it responded loyally. As a result, on March 20th of that year, a scale of prices was agreed on at a level which it was calculated would give the lower-cost producers a reasonable profit, and those prices were immediately put into effect generally.

Shortly afterward the Government itself, through one of its agencies, the Railroad Administration, refused to abide by this agreement. The immediate effect was injurious to the industry, but shortly afterward the demand for steel became so strong that prices, beginning in the late fall of the year, advanced rapidly till they were, in some cases, $50.00 a ton or more above the quotations agreed on between the manufacturers and the Industrial Board.

But the Corporation, holding that public policy demanded that living costs and all factors entering into living costs should be held down as low as possible, continued and still continues to sell steel at the prices fixed the previous March. This, notwithstanding the fact that it has since advanced wages and that its costs have been materially increased by the advance in railroad rates on its raw materials, put into effect on August 26, 1920.

The Corporation could easily have obtained the same prices as did its competitors and would have reaped enormous profits as a result, but it contented itself with a reasonable

return and the consumer and the public at large have benefited from its course.

Important among the policies of the Corporation, in its dealings with the public, has always been publicity. The organization of the big company was marked by open dealing, all details of the proposed merger being published widespread before the deal was carried through. And ever since the Corporation began its existence the policy of keeping the public and its stockholders informed as to its actions and business has been adhered to. The results of the Gary dinners were promptly given to the public press; and there is testimony in the record in the Government case that the Department of Justice of Washington was always kept fully informed. Moreover, no complaint was ever made by any one of the "Gary dinners" until the Stanley Committee intimated an illegality, after which it has never been claimed there was any such dinner or meeting.

Almost since the date of incorporation it has been the custom to issue quarterly a report of earnings showing the results of the operations of the three months covered. These reports are issued on the last Tuesday of the month following the quarter covered in the report. On the tenth of each month a statement of the unfilled tonnage on the Corporation's books is issued from the head office, and in other ways the stockholders are kept informed as to what is going on in their company.

Annual meetings of the Steel stockholders form a decided contrast to those of many other companies. One is accustomed to look upon the annual meetings of corporations as mere formalities attended by a few officials with perhaps a lone stockholder not holding office; and reticence in discussing the company's business or policies is the general thing. But the Steel meetings are always well attended, and stockholders are encouraged to discuss fully the affairs of their company, and to criticize to their heart's content.

Rails on Cooling Bed

Pouring Ingots

Chairman Gary is ready and willing to explain at length on any issue raised, and the whole effect of these meetings is one of openness, of candor.

How ready the management of the big company is to meet criticism half-way is illustrated by the events at the annual meeting in 1911 when a stockholder moved that a committee be appointed to investigate the condition of the steel workers in the Corporation's mills and to report thereon, suggesting such remedies for evils they might find as seemed wise. The mover particularly criticized the twelve-hour day and the seven-day-a-week schedule of labor. It was questionable whether the mass of stockholders present, having absolute confidence in the desire of Judge Gary to give at all times the fairest possible treatment to the worker, would have carried such a motion, but Judge Gary himself, holding proxies for the majority of the stock, voted all this stock in favor of an investigation, and a committee was appointed. Thus did the management of the Corporation give proof of its readiness to face investigation and to answer fully and satisfactorily any honest criticism, just or unjust.

The attitude of the Corporation's management in the matter of publicity, it seems to the writer, is simply that the company's vast size and the number of its stockholders, as well as the army of men it employs and its influence upon industrial conditions generally, render it in a sense a public institution, one in which there is an enormous amount of warranted public interest, and that this interest should be satisfied. That so great a company must work in the open, all its actions being able to bear the full glare of daylight.

Up to the time of the Corporation's organization publicity on the part of big industrial enterprises was almost unknown. Certainly steel makers did not show any desire to take the public, or even the small stockholder, into their confidence in regard to details of their business. The immense profits made by the Carnegie company were not revealed until the

Carnegie-Frick quarrel caused their revelation. But all this has been changed and the necessity for full reports to stockholders and to the public at large is recognized by the corporations themselves. Steel companies, in particular, give detailed information of their earnings, operations, etc., at least once a year, and in some cases every quarter. And this is doubtless due to the example of the Corporation.

Sooner or later all big business must fall into line in the matter of publicity. For the leaders of business thought are coming to recognize that secrecy breeds suspicion and enmity, while openness makes friends. And they will all follow—as many have already done—the example of the Steel Corporation of doing business in the full glare of daylight.

In the chapter on Welfare Work and in that on the Steel Strike two aspects of the Corporation's policies regarding its relations with employees are discussed at considerable length. Broadly speaking, the Corporation's attitude is that every worker is entitled to as large a wage as conditions in the industry and justice to investors warrant, decent living conditions, and the right to work when, where, and for whom he pleases. By encouraging the worker to invest in its stock it seeks to make sure his full coöperation in its activities and to bring home to him the realization that the interests of labor and capital are identical.

Finally, we come to the Corporation's relations with stockholders, its financial policy. For twenty years the big company has been steadily building up its assets with a view to making its common stock the safest investment of its kind in the world. It is not too much to say that it has now attained that eminence, and if its stockholders in the past have not always shared in profits as liberally as they may have considered their due, there is no question that their loss in the past has been much more than made up for by the security which the future promises.

CHAPTER XIII

STEEL FROM THE INVESTOR'S VIEWPOINT

ALTHOUGH throughout the chapters of this history stress has been constantly laid upon the activities of the United States Steel Corporation in promoting better relations between capital and labor, in improving the working conditions of its employees, in introducing new and more honorable methods into competition, and in blazing the pathway for corporate publicity, it must be recollected that the Corporation has been a business enterprise first and last.

In the final analysis it was and is a money-making institution. The paying of dividends to stockholders was the basic reason for its existence.

United States Steel, both in capitalization and output, was the largest business in the world. But its management was not satisfied with this. It has always been the ambition of Judge Gary and his associates to make its stock the premier industrial security in the United States and, for that matter, in any country.

Final decision as to the measure of their success rests with the investor; and he has decided and made his decision evident. To-day United States Steel common stock sells in the market at an investment yield lower than most, if not all, other industrial and railroad securities, a yield, in fact, that compares not unfavorably with that on securities of the Government of the United States itself.

Nor is the reason far to seek. As the Corporation has earned and enjoys the confidence of its competitors, customers, and most of its workers, so it has earned the confidence of the great mass of the investing public which regards it,

not without justification, as the principal bulwark of the country's business.

The investor knows that the big company has great earning power and enormous assets behind every dollar of its securities. He knows, moreover, that its activities have always been open to the light of day. They have undergone the most rigid scrutiny by various public investigating bodies and by the U. S. Department of Justice. And every revelation made has but served to convince the public more and more of the ability of the Corporation's management, its financial strength, and the justice of its policies.

In an earlier chapter it was suggested that United States Steel common stock at the time of organization in 1901 had no actual investment behind it, that in a sense it represented pure water or "blue sky." An enormous amount in securities had been paid for good will, the value of which was, at best, a matter of personal opinion. The Corporation's earning power, despite the sanguine hopes of its organizers, was uncertain or, at least, not proven.

And these facts were fully realized by Judge Gary and his colleagues. While probably believing that full value in earning power had been received for the hundreds of millions paid for good will, they were not satisfied to let matters remain in that state, and bent their energies, at the sacrifice of immediate dividends to stockholders, toward squeezing out every possible drop of water behind the stock, and putting at least one hundred cents of tangible assets behind every dollar of securities of any kind in the hands of the public.

In this they have more than succeeded. The bonds and preferred stock of the Steel Corporation are to-day recognized as being absolutely gilt-edged, and even the most captious critics do not attempt to deny that every share of common stock is backed up by assets far exceeding its face value.

Reference has already been made to Judge Gary's statement, in October, 1919, before the Senate Committee on

Education and Labor, then investigating the steel strike, that the Corporation's properties were worth at least $2,200,000,000. Competent steel men, outside the Corporation, express the opinion that this valuation was ultra conservative. They point to the fact that the Judge's valuation was obviously based upon expenditures of approximately $900,000,000 for new plants between 1901 and 1919, and assert that it will never be possible to replace these plants for less than $1,250,000,000. But accepting Judge Gary's valuation as accurate, Steel common has between $260 and $270 in assets behind it.

Just as the investment behind the stock has been increased and accumulated, so has earning power been strengthened. So great is the Corporation's capacity to-day and so strong is it financially that it is almost inconceivable that it will at any time in the future be unable to maintain its present dividend rate of $5.00 a share annually on the junior stock.

From the date of its incorporation in 1901, to December, 1919, the big company expended for new construction, increasing its capacity and modernizing its plants, $888,301,355, or the equivalent of $159 on every share of its common stock, and $19,717,755 more than its entire stock capitalization, common and preferred. Nor did this include approximately $108,000,000 spent for plants for producing war materials and written off as operating expenses.

Construction expenditures in 1920 were, approximately, $102,000,000, making a total on this account since incorporation of a billion dollars in round figures.

Appropriations for depreciation, sinking funds, and repairs to plants have been enormous, aggregating in nineteen years $1,424,415,590, or almost as great a sum as that at which the property account is now carried, $1,573,661,547.

The Corporation has expended, for ordinary repairs alone, $835,900,568, or about the actual investment value of the properties acquired at incorporation.

As a result of these enormous expenditures, it has:

Increased its pig-iron manufacturing capacity from 7,440,000 tons in April, 1901, to 18,400,000 tons in December, 1919, a gain of 147 per cent.;

Increased its steel ingot capacity in the same time from 9,425,000 tons to 22,350,000 tons, or 137 per cent.;

Increased its finished steel capacity from 7,719,000 tons to 16,200,000 tons, or 110 per cent.;

Increased its cement capacity from 500,000 to 13,500,000 barrels, or 2,600 per cent.;

Created from zero a by-product coke capacity of about 45,000,000 gallons of benzol, toluol, and other light oils, as well as built up enormous capacity for other coke by-products including ammonia sulphate, tar, fertilizers, etc;

Increased the railroad mileage it owns and operates from 2,007 to 3,775 miles or 88 per cent.; the number of cars owned from 27,481 to 62,258, and of locomotives from 593 to 1,445.

Increased the number of steamers, barges, and other marine units owned from 112 to 371.

Increased its working capital from $138,110,545 to $569,988,259, or 313 per cent.;

Its iron-ore holdings, estimated at 700,000,000 tons in 1901, are now placed at 1,600,000,000 tons

A better grasp of the Corporation's expansion between 1901 and the beginning of 1920 is obtained by comparing capacity at the date of incorporation with what has been added since:

	1901	ADDED SINCE
Pig iron	7,440,000 tons	10,960,000 tons
Steel ingots	9,425,000 "	12,925,000 "
Finished steel	7,719,000 "	8,481,000 "
Cement	500,000 bbls.	13,000,000 bbls.
Benzol	———	45,000,000 gals.
Railroad mileage owned	2,007 miles	1,768 miles
Railroad cars owned	27,481	34,767
Locomotives owned	593	852
Steamers, etc.	112	259
Iron ore deposits	700,000,000 tons	900,000,000 tons
Working capital	$138,110,545	$431,877,714

As these figures show, additions since 1901 would constitute a new company larger in practically every respect than was the Steel Corporation at its birth. And this expansion has been achieved with little addition to the book value of the properties, which at the end of 1901 was carried at $1,437,494,863 and in 1919 at $1,573,661,547.

And, of course, there have been further additions during 1920. Complete figures for that year are not available at the time of writing but property account as of December 31st, is estimated at $1,620,140,000 and working capital at $595,952,000.

Nor has this expansion been accompanied by the addition of a single penny to stock capitalization. In fact, the amount of preferred stock has been reduced, as has the annual charge on earnings for bond interest and preferred stock dividends.

When formed the Steel Corporation had a total bonded debt, including funded indebtedness of subsidiaries, of $364,735,900, and its bond-interest charges were at the rate of $23,964,175. Its preferred stock was $510,281,100 with an annual dividend charge of $35,719,677, or a total of $59,683,852, which had to be deducted from earnings before there could be any distribution made on the junior security issue. At the end of 1919 total bonds of the Corporation itself and its subsidiaries amounted to $568,727,932. Interest charges thereon were $29,210,898. But preferred stock has been reduced to $360,281,100 and the dividend requirements thereon to $25,219,677, making total deductions from earnings before arriving at the balance available for distribution to common stockholders of $54,430,575, or $5,253,277 less than in 1901. This saving in interest on preferred dividend charges is equal to a little over a dollar a share on the common stock, which has remained at the same figure throughout the twenty years of the Corporation's existence.

In discussing the investment value of Steel common, it is necessary to lay considerable emphasis on the actual tangible assets, at cost, behind the stock. Tangible investment is of particular importance because earning power is based largely on it, and on earning power depend dividends.

Although Judge Gary's estimate of the worth of the Corporation's properties is considered by experts very conservative, the writer proposes to disregard it for a moment and to discuss the value behind U. S. Steel stock on the most conservative basis—that of tangible assets in 1901 plus tangible additions since. Even on this basis, which is certainly a bed-rock computation, it will be seen that the assets behind "Little Steel" are considerably larger than its par value.

Eliminating from the balance sheet $508,302,500 common stock under the plea that it represents nothing but good will, we still have $741,019,795 surplus accumulated in nineteen years, or sufficient to restore with tangible value the common stock item wiped out and still leave a surplus of about $233,000,000. Or, deducting from present book capital and liabilities, plus surplus and reserves which may fairly be regarded as surplus, the common stock item, leaves a balance, representing tangible investment of $1,670,028,825.

On this basis the assets behind the common stock are not far from $150 a share.

There is still another way of calculating values, and here again let us eliminate the original common stock for reasons already given and place the value of the investment in the Corporation in 1901 at $815,000,000 in round figures, or approximately the aggregate of the bond- and preferred-stock issue. The ingot capacity based on this investment was 9,425,000 tons. The ingot capacity on December 31, 1919, was 22,350,000 tons. Presuming that investment has increased proportionately with its capacity, the value behind the Corporation's securities is now $1,930,000,000 and this

makes no allowance for values represented by coke by-product plants, cement plants, increased ore reserves, shipyards, etc. Ingots alone are taken as the base of the calculation since this product is generally regarded as the measure of a steel company's capacity.

In studying the Corporation's annual reports, the analytical investor will find certain indications that appear discouraging at first glance. They must be examined in the light of other facts and particularly in the light of comparative tangible investments.

Reference is here made to the increasing tendency shown in the operating ratio of the big company. Normally, an increasing operating ratio, a tendency toward diminution of the margin between operating expenses and gross receipts, is not a healthy sign in any business, and the Corporation undoubtedly shows just such a diminution.

But in the case of United States Steel this usually unfavorable factor is really a tower of strength. It is, in fact, deliberate. It is part and parcel of the Corporation's policy of giving the wage earner as large a share as possible in the proceeds of operations. And it has been possible to increase the worker's share of gross sales in recent years without injustice to stockholders only because of the ploughing back of profits of previous years into new plants, increasing the investment, and enlarging capacity.

Because of this policy, it has been possible for the Corporation to show increasingly large earnings on its shares, although capital's percentage in gross receipts has declined. It is hardly necessary to say that there is no intention of letting the decline go beyond just limits. Although the Corporation's management has always shown recognition of the rights of the worker in this as in other ways it has never lost sight of the equally important rights of the investor and the latter has no cause to fear that it will ever do so.

In 1901 on a net investment of approximately $815,000,000

the Corporation, to pay bond interest, preferred dividends and 5 per cent. on its common stock, had to earn approximately $85,000,000. To-day, to pay the $80,000,000 required for the same purposes, it has a net tangible investment of between $1,700,000,000 and $2,000,000,000.

The following table illustrates how increased investment and capacity permit the big company to show large earnings on its stock with a much smaller return on its investment or capacity to-day than was possible in 1901.

	1920	1901
Actual investment	$1,800,000,000	$815,000,000
Interest and dividends at 5 per cent. on common stock	80,000,000	85,000,000
Per cent. on investment.	4.4	10.5
Per ton earnings needed on iron capacity to earn interest and dividends.	$4.34	$11.42
Per ton earnings needed on ingot capacity to earn interest and dividends	3.58	9.02
Per ton earnings needed on finished steel capacity to earn interest and dividends	4.94	11.01

Thus it is both good business and good policy for the Corporation to give the wage earner a larger share in gross receipts, and its enormous investment and great capacity enable it to do this without prejudicing interests of stockholders.

Further, the very fact that so small a margin of net profit is needed, whether calculated on investment or capacity, to pay dividends, is of itself satisfactory assurance of the safety of the dividend rate.

A great steel maker said, some years ago, that the demand for steel, the most important metal of the present age, doubles every twenty years. Experience educates that the actual rate of the growth of demand for the metal is even faster. The needs of the world for steel, as they expand, can only be met by the putting of new capital into the production of more

steel, and this capital, to be attracted, must be allowed an earning power of at least 6 per cent. The Corporation, as shown, needs to earn less than 4½ per cent. on its investment to continue the present dividend rate on its common stock. Obviously it has nothing to fear from possible future competition. It can hold its own and be generous to stockholders in the face of any competition that can occur.

Another factor of the highest importance in considering United States Steel stock as an investment is that of production costs. Here again the Corporation is in an enviable position. That its production costs are lower than those of most, probably all other manufacturers, is not challenged even by competitors themselves. It is indisputable. Presuming the possibility of a bitter trade war, the Corporation would unquestionably emerge the victor. But a trade war seems out of the question. The Corporation could not, for politic reasons, initiate it, and its competitors could not afford to. It stands in the position of a strong man armed, keeping his house, and, it may be added, its stockholders may be at peace.

The immense spread of the Corporation's activities, the wide diversification of its products, the enormous area over which its plants are scattered, all these are further elements of strength. A company making only a limited line of goods is subject to adverse or favorable influences arising out of the changing demands for these lines. But the law of averages protects the company making a wide variety. A loss here is made up by a gain there, and the general tendency is toward greater stability. Influences that affect one section of the country unfavorably often do not extend to other sections, and the Corporation operates in all sections.

In the foregoing discussion of the value of United States Steel stock as an investment the factor of good will has been deliberately ignored, eliminated. Nevertheless, good will is probably the Corporation's most valuable asset.

During twenty years its management, under the able leadership of Judge Gary, has been steadily building up good will. It has endeavored to gain the favorable opinion, not of its customers alone, but of its competitors, its employees, and the public at large; and it has succeeded.

Its policy of a square deal to all is as old as the Corporation itself; the events of the past year afford an illustration of one phase of this policy and its effect on good will that has a direct bearing on the present discussion.

Throughout the year, during which a great advance in the price of steel occurred, the big company steadfastly refused to depart from the prices it had agreed on in March, 1919, with the Industrial Board appointed by the President of the United States. The fact that the Government itself had abrogated this agreement gave it ample warrant to do as other manufacturers were doing and to sell steel at prices from $10 to $50 a ton above those it charged. But in order to help deflate living costs to the public and to assist in the readjustment of business, which its management saw was inevitable, it rejected with open eyes the enormous profit it might have made and contented itself with moderate earnings.

In addressing the stockholders of the Steel Corporation at the annual meeting of April 19, 1920, the chairman said:

> Inquiry has been made by some of our stockholders as to why, in view of the great demand, the cost of production, and the prices received by other manufacturers, we hold the selling prices of our commodities down to those which were fixed by agreement between the Industrial Board and steel manufacturers at Washington, March 21, 1919.
>
> It seems to us the problem of high cost of living is of convincing importance. When the increasing tendency is to insist upon payment of unreasonable sums for every commodity and for every service, so that the vicious whirl of advancement seems to be unending, we think there is a moral obligation on the part of everyone to use all reasonable efforts to check this carnival of greed and imposition, even at some sacrifice. . . . It should be the effort of all to establish and maintain a reasonable basis of prices; certainly to prevent further advances.

By this policy it has built up in a single year good will of incalculable value which will show on future earnings.

And even though good will may be eliminated in discussing the investment value of steel, if for no other reason than that it is too immense to permit of computation, the steel stockholder knows that it is behind his investment all the time.

CHAPTER XIV

THE GREAT STEEL STRIKE

DURING the World War, there began to gather on the industrial horizon a cloud no bigger at first than a man's hand, but one that grew fast in size until it broke in a storm the effects of which made themselves felt in every corner of the globe.

This was a general feeling of unrest and dissatisfaction, by no means confined to one country or one class of people, but having its most virulent manifestations among the laboring classes, the proletariat. This unrest was fostered and seized upon by radical leaders everywhere to further their own ambitions, their object being the overthrow of capital, the nationalization of industry, and their own aggrandizement.

Nor were they without considerable success in some countries. Russia, of course, provided the most notable example, and England to-day is suffering by reason of the same forces; but the United States, notwithstanding its aloofness from the centre of disturbance, its prosperity, and the general high average of common sense among its inhabitants, did not entirely escape.

Here the radical manifestations took the form of industrial strikes which broke out sporadically in all quarters. It was natural that the steel industry should not be immune. In fact, it was inevitable that steel, more than any other industry, should be selected for especial attention by those who hoped to do away with private ownership and to establish mob rule.

Among the reasons that may be cited for the selection of the

steel industry, and the United States Steel Corporation in particular, for a grand attack by the radical forces were the following:

Steel was "open shop." Since 1892, when the Carnegie Steel Co., in one of the bloodiest and bitterest industrial conflicts in history, crushed the Homestead strike, the labor leaders unions had never succeeded in regaining a foothold in the trade, and it was looked upon as a lost province by labor leaders who never abandoned the hope of some day organizing the steel workers. This fact gave the radicals in the labor ranks confidence that they could count upon the support of the usually conservative heads of organized labor in America to further their plans if steel were chosen as a battleground. And the events proved that their confidence was not misplaced.

Further, the physical necessities of steel making are hard on the worker. Although employers have done much to ameliorate conditions in the mills and mines, it is impossible to make the work really pleasant and it was therefore comparatively easy to give verisimilitude to distorted statements regarding the hard lot of the steel worker.

Again, a large percentage of the common labor in the steel plants was of alien birth, usually lacking in education and easily influenced by inflammatory doctrines.

Labor leaders, doubtless, also believed that the long litigation which the Government had conducted against the Steel Corporation had turned public sentiment against the big company. If this was a factor in their calculations they were sadly deceived.

So, briefly, we have the genesis of the steel strike—the determination of organized labor to absorb steel workers and the seizing upon this by the radicals as the tool to further their own anarchistic ends.

The strike, when it came, was inaugurated ostensibly to compel the manufacturers to grant recognition to union

"representatives" of the workers. Steel company officials claimed that its real object was twofold—to force upon the industry the "closed shop," and to overthrow the social scheme upon which the American Republic was grounded.

Labor leaders throughout the struggle consistently denied any intention of forcing a closed shop. And it is true that they at no time demanded this in so many words; but the closed shop would have resulted inevitably had they won. One has only to examine their demands to realize this.

And the lust for power on the part of the leaders of organized labor was used by the radicals as a tool with which they hoped to gain a much greater goal than the closed shop—the nationalization of the steel industry and, using that as a wedge, of all American industry.

In fighting and smashing the strike the Steel Corporation performed an invaluable service, not alone to its stockholders or to capital, but to the vast majority of workers who claimed the right to work at their own volition and not the dictates of self-appointed leaders; a service to the American public at large.

Says Mr. Charles Piez, one-time head of the Emergency Fleet Corporaton, in a recent article in *The Independent:*

> The real or imaginary wrongs of the workers played not the slightest part in the decision to organize the steel industry.
>
> It was a citadel of the open shop that was the subject of attack, it was the last barrier against complete and final unionization of American industry, against which Foster and Fitzpatrick combined their wits and resources.
>
> And it is to the everlasting credit of Judge Gary that he successfully resisted this attack, for it is to the interests of the public that the principle of the open shop be sustained.

How important to the labor unions was the hope for organization of the Steel Corporation is obvious. Between 500,000 and 600,000 workers are engaged in the industry, the Corporation alone employing about 275,000. Possibly another half million are employed in closely allied industries.

(*Upper*) Part of the Duquesne Works
(*Lower*) Detail of Unloading Ore — a Hulett Machine

Making Wire Rods—Old Method

And the steel trade, as well as these allied industries, has for years looked to the Corporation for guidance on important questions of public polity. Hence, United States Steel's adherence to the open-shop principle was a deep and rankling wound in the side of the labor unions.

So long as the big enterprise of which Judge Gary is head remained outside of the union's fold there was small hope of herding into it any material number of workers in other plants. U. S. Steel was a citadel of the open shop, the bulwark between free and union labor. If it could be converted from "open" to "closed" shop, the early unionization, not of the steel trade merely, but of all American industry, would follow, and the power of the union leaders would be expanded to an almost illimitable extent.

It is doubtful if the older and wiser among the union chieftains would have forced the issue at the time they did had they been left to their own decisions. But they were not. They had the radical element to reckon with.

It is perhaps unnecessary to explain that organized labor in the United States is divided into two parts: On the one hand, there is the American Federation of Labor, headed by Samuel Gompers, and including the great majority of unionized workers. This organization recognizes property rights and is loyal to the principles of American government. But its leaders, being only human, are apparently determined to bring all industry under its sway and are impatient of the ideas of those workers who prefer to stand on their own feet.

On the other hand, there is a smaller organization, the Industrial Workers of the World, better known as the I. W. W. or, sometimes, the "I Won't Works." "The wobblies," as they prefer to call themselves, are as bitterly opposed to the principles of the larger Federation as they are to capital. Chief among their tenets is the Marxian fallacy that labor produces all and capital nothing and that, therefore, capital must be abolished.

Some years ago there arose to prominence in the councils of the I. W. W. one William Z. Foster, a man of unquestioned ability but of principles dangerous and subversive to government. These principles he set forth in a book on "Syndicalism," a book which constitutes one of the most extreme examples of anarchistical literature. Foster characterizes the wage system as "the most brazen and gigantic robbery every perpetrated since the world began."

Although advocating the most drastic measures for the overthrow of capital, Foster was apparently sufficiently astute to realize that a vast majority of the American people, and even of organized labor, would not and could not accept his views, and that the I. W. W. which did was not a powerful enough weapon with which to achieve his ends.

He believed, however, and events proved that he was not mistaken, that the American Federation of Labor could be inoculated with radicalism if the poison were spread from the inside. He therefore publicly advocated what he described as the process of "boring from within," urging that the radicals join the more conservative Federation and, once inside that body, disseminate their vicious doctrines from within.

Not long after this we find Foster a member of the Federation, ostensibly converted from his I. W. W. leanings, enjoying the confidence of Gompers and his co-workers, and high in their councils. His "boring" process had met with eminent success.

Meanwhile, the World War was approaching its end, leaving in its wake a world-wide wave of industrial unrest. Russia was being misgoverned by its most radical element, who held their power in the midst of a sea of blood. Communistic doctrines were being preached, openly or *sub rosa*, in every land and clime. American labor was restless, and the foreign element, particularly, showed that it had been infected with the fever of anarchism that was rampant in parts of

Europe. The time had come for the radicals to strike, for the "boring-from-within" process to bear fruit.

In the early summer of 1918, only a few months before the war ended, the American Federation of Labor held its annual convention at St. Paul, Minn., and there passed a resolution offered by Foster for the organization of the steel industry. A committee was appointed to take charge of the work and the converted radical, Foster, was made a member of this committee.

For a full year the committee's work was carried on quietly. At the next annual convention of the Federation, this time at Atlantic City, N. J., John Fitzpatrick, one of Foster's associates, reporting to the Federation, claimed that 100,000 steel workers had affiliated themselves with one or other of the unions belonging to the Federation.

Fitzpatrick was a man of an entirely different type from Foster. Mr. Piez thus describes him: "He has in the ten years I have known him never to my knowledge advanced or even advocated any constructive piece of legislation, and he has held his position with the Chicago Federation (Fitzpatrick is president of this Federation) because he is honest and because he is a skilled labor politician. John Fitzpatrick hasn't the slightest idea of the problems of industry, he can't conceive of overhead expense as anything more than graft, and lacks all knowledge of the problems of production, distribution, and the sale of the products of industry. His horizon begins and ends with the wrongs that labor has suffered, and he usually refers to wrongs that wise legislation and a changed relationship have remedied years ago."

But while the labor leaders had been busy collecting dues from and enlisting sympathy for the "oppressed" steel workers there had, strange to say, come no call for help from the steel workers themselves. They made no claim of being down-trodden; rather did many of them resent, as a slur on their manhood, the insinuation that they were. The union

chiefs have since claimed that they were appealed to by the workers, but not one iota of evidence has ever been adduced to support this claim.

Whether or not Fitzpatrick's report of 100,000 enlistments was correct—subsequent events indicate that it was grossly exaggerated—the ruling powers in the American Federation evidently believed that they now had sufficient strength in the field to attempt an issue, and events consequently moved forward quickly after the Atlantic City convention.

Their first move was the sending of a letter by Samuel Gompers to Judge Gary, asking the head of the Steel Corporation to meet a union deputation to discuss question affecting the welfare of the workers. This letter was never answered.

Judge Gary's refusal to reply to Gompers has been severely criticized by union sympathizers and others. For example, by some of the members of the Senate Committee that later investigated the strike. Gompers, who, in the past, had seen legislatures bow to labor's mandate, was not unnaturally shocked at the "discourtesy." But Judge Gary had enjoyed a previous experience in corresponding with union representatives. A courteous reply to a letter on somewhat similar lines from Michael F. Tighe, president of the Amalgamated Association of Iron, Steel and Tin Workers, in which the Judge had said that the Corporation did not negotiate with labor unions as such, had been used as a basis for a report that the big company was "in communication" *ergo*, negotiating, with the unions, and the Judge did not want this experience repeated.

Whether it might not have been wiser had Judge Gary answered Mr. Gompers' letter and obviated the possibility of any misunderstanding by giving the correspondence to the press is an open question. But he was probably averse to being drawn into what would likely prove the beginning

of a long epistolatory controversy with the head of the Labor Federation. This could not but have had an unsettling effect on the more easily influenced among the steel workers, playing into Gompers' hands.

It is also not unlikely that Judge Gary believed the labor unions were resolved on forcing the issue of organizing the steel industry and that any verbal preliminaries to the conflict would be worse than useless.

After this abortive attempt on the part of the union to start negotiations with the steel industry through Judge Gary, and, *ipso facto*, to gain recognition from the leaders of the industry, events moved quickly to a climax. Early in July, 1919, the steel-trade organizers announced that they were taking a vote of the workers, and not long after made the claim that 98 per cent. of the men employed in steel making had approved a strike unless the Corporation yielded to a set of twelve demands drawn up by Foster and his associates. As soon as these demands were made public it became plain that a steel strike was inevitable unless the labor organizers receded from their position. The demands were:

1. Right of collective bargaining.
2. Reinstatement of men discharged for union activities.
3. An eight-hour day.
4. One day's rest in seven.
5. Abolition of twenty-four-hour shifts.
6. Increase in wages sufficient to guarantee American standard of living.
7. Standard scales of wages in all trades and classifications of workers.
8. Double rate of pay for all overtime, holiday, and Sunday work.
9. Check-off system of collecting union dues and assessments.
10. Principles of seniority to apply in maintenance, reduction, and increase of working force.

11. Abolition of company unions.
12. Abolition of physical examination of applicants for employment.

Some of these demands were merely camouflage, inserted to give the public an idea of imaginary wrongs against the steel worker. The steel companies generally have been trying for years to institute a real eight-hour day and have made the eight-hour day the basis of wage payments. Practically all steel workers work only six days a week. The twenty-four-hour shift is borne by a very small percentage of the workers and by these only on widely separated occasions. The Corporation and its competitors as well, following its lead, have repeatedly advanced wages without solicitation from the men, and the claim that the wage they pay is insufficient to permit American standards of living has not borne investigation.

But the acceptance of such demands as the recognition of the right of collective bargaining, coupled with the check-off system of collecting union dues and assessments, would have handed over the companies, bound hand and foot, to the unions. The application of the seniority principle in maintaining, reducing, and increasing working forces would have obviously made for inefficiency and destroyed the incentive to effort and good work on the part of the men. Finally, physical examination of applicants for employment in an industry where sound health, active muscles, and keen eyesight are necessary not only for the safety of the worker himself, but for that of his associates, was a precaution which the companies could not dispense with in fairness either to themselves or to their employees.

It is hardly necessary to discuss these demands in further detail. All the circumstances indicated that they were merely a gauge of battle, hardly intended for discussion.

These demands were announced by E. J. Evans, who in an interview with press representatives was quoted as declaring

that either they would be accepted in toto by the Corporation or the steel workers would strike within a week, shutting down the entire industry. This was about the middle of August, 1919.

Nothing actually happened, however, until the 26th of that month. On that day a committee of union leaders composed of the five gentlemen whom Gompers had previously asked Judge Gary to meet arrived in New York City and called at the offices of the Corporation seeking an interview, only to meet with another polite refusal. Returning to their hotel, the members of the committee thereupon sent the head of the Steel Corporation a letter stating that they represented a "vast majority" of the workers of the steel industry, and on this basis for the third time asked a hearing. To this letter Judge Gary sent the following reply:

August 27th, 1919.

Messrs John Fitzpatrick, David J. Davis, William Hannon, William Z. Foster, Edward J. Evans, Committee.

Gentlemen:

Receipt of your communication of August 26th is acknowledged.

We do not think you are authorized to represent the sentiment of a majority of the employees of the United States Steel Corporation and its subsidiaries. We express no opinion concerning any other members of the iron and steel industry.

As heretofore publicly stated and repeated, our Corporation and subsidiaries, although they do not combat labor unions as such, decline to discuss business with them. The Corporation and subsidiaries are opposed to the "closed shop." They stand for the "open shop," which permits one to engage in any line of employment whether one does or does not belong to a labor union. This best promotes the welfare of both employees and employers. In view of the well-known attitude as above expressed, the officers of the Corporation respectfully decline to discuss with you, as representatives of a labor union, any matters relating to employees. In doing so, no personal discourtesy is intended.

In all decisions and acts of the Corporation and subsidiaries pertaining to employees and employment their interests are of highest importance. In wage rates, living and working conditions, conservation of life and health, care and comfort in times of sickness or old age, and providing facilities for

the general welfare and happiness of employees and their families, the Corporation and subsidiaries have endeavored to occupy a leading and advanced position amongst employers.

It will be the object of the Corporation and subsidiaries to give such consideration to employees as to show them their loyal and efficient service in the past is appreciated, and that they may expect in the future fair treatment.

Respectfully yours,
E. H. GARY,
Chairman.

Upon receipt of this letter the members of the Union Committee returned to the steel centres and set on foot preparations for the strike.

Shortly before this the President of the United States had announced his intention of calling an "Industrial Conference" at Washington, beginning October 6th, to consider the grave industrial questions facing the country in the wake of the World War, and particularly the relations between capital and labor. It was obvious that one of the President's reasons for calling the conference at this time was to forestall the threatened steel strike, which had been brewing for months, and to bring about, if possible, harmonious relations between the steel companies and organized labor.

But the President did not stop there. He used the power of his great office in every legitimate way to ward off the blow that was threatening the country's industry. Bernard M. Baruch, former head of the War Industries Board, was commissioned by Mr. Wilson to endeavor to persuade Judge Gary to confer with the unions, but Mr. Baruch was unable to change the attitude of the head of the Corporation, who saw plainly what few others realized at the time, that the issue was not merely that of a strike, but that the very foundations of the country's liberty were threatened, and that it was no time for compromising. On the 10th of September, when all hope of averting the strike seemed gone, the President made still another effort and dispatched

a telegram to Samuel Gompers, urging that action be postponed until after the Industrial Conference.

At this time the situation stood thus: The organized portion of the steel trade had voted to strike, leaving details and the decision as to the date in the hands of the committee already named. Mr. Gompers referred the President's letter to the committee, which had full power to comply with the request of the nation's Chief Executive, but the committee declared that postponement was out of the question. The strike date was set for September 22nd, on which day, the union leaders confidently asserted, there would not be a wheel turning or fire burning in any steel mill west of the Alleghanies.

Thus was the fatal die cast. From that time both sides girded up their loins and prepared for the conflict.

The steel companies expressed quiet confidence in the outcome, while their opponents loudly boasted of certain victory. The officials of the Steel Corporation and of the other companies threatened must have known that a considerable element among their foreign-born employees had been led astray by the radical preachings of labor organizers, but they believed that the best element among their men was satisfied with conditions and would continue at work. And this confidence proved justified.

The steel trade, outside the Corporation, had been watching the issue with some misgiving, but as it became plain that Judge Gary was standing firm in his attitude, general satisfaction was evident and confidence in the final result increased. For the trade was not unduly worried as to the outcome in the event of a showdown. The opinion generally expressed was that the issue must be forced sooner or later, and that it was probably best to have it settled as speedily as possible by a decisive conflict. But in many quarters apprehension was felt that the Judge, realizing his immense responsibility, might allow himself to be persuaded into a compromise.

However, Judge Gary was firm, as those who knew him best were sure he would be. For there was a matter of principle involved, the right of the independent worker to work when, where, and with whom he desired and could obtain employment. And for Judge Gary, compromise on questions of principle was out of the question. As this became realized, all misgivings vanished. Judge Gary's already recognized position as leader of the steel industry was made more secure than ever before. The trade left the issue in his hands, assured as to the result, and this assurance was not abused.

It is not too much to say that the entire country waited with bated breath for the events of September 22nd. It was recognized that this was not a mere skirmish between employer and employee, but a gigantic struggle between capital and radical labor. As time wore on it developed that there was another and stronger party to the conflict, the vast mass of unorganized workers; and this threw its strength on the side of the Corporation, dooming the hopes of the strike leaders.

At first the strike organizers unquestionably struck hard and with considerable result. Between the conflicting claims from all sides it is impossible to say just how many men went out in the steel mills, voluntarily or through intimidation, but it is certain that at many centres, such as Youngstown, where the Corporation and some of the larger independents—Republic Iron & Steel, Youngstown Sheet & Tube and Brier Hill Steel—have big plants, operations were practically suspended in toto. At Gary, the Corporation's largest plant, operations were reduced to a low point, and at many other centres, the results, at the outset, were apparently in favor of the strikers.

But Pittsburgh, the world's steel centre, was almost unaffected. At Homestead, Braddock, Duquesne, and other big Corporation plants the workers unequivocally proved

their loyalty by sticking to their jobs, and the strike leaders failed utterly to make headway. Day after day the smoke ascending in volumes from the stacks of these plants gave assurance that the steel companies were far from crippled and sent to the union chiefs the message of certain defeat unless they could succeed in quenching these furnaces.

Although, ostensibly, the strike was directed against the Steel Corporation and no attempt had been made to negotiate with the heads of other concerns, all steel companies west of the Alleghanies were affected by the walk-out as much as or more than was the Corporation. So far as the big company was concerned the greatest number of men out when the strike was at its worst, or within a few days of its inception, was 28 per cent. of its total of employees or 40 per cent. of its manufacturing force. These were the figures given by Judge Gary in his testimony at Washington in October, and undoubtedly they are as nearly accurate as possible. And of the men out there is no question that many were kept from work not by persuasion but by intimidation, the strikers having used threats freely to keep the loyal workers from the mills.

Such tactics are not at all a new thing in similar conditions. Steel workers who sought to report for duty were sent letters threatening them with injury or death to themselves or families. In some cases the threats were sent to the men's wives or other dependents where their effect was perhaps greater.

The strike had not been in progress two days before its genesis became patent. The American public soon realized that probably 98 per cent. of the strikers were alien-born and that the native worker, with few exceptions, and large numbers of naturalized foreigners, were sticking to the steel companies. This, together with the inflammatory utterances of the strikers themselves, convinced the public that the strike was not what it claimed to be, an effort to get

fair wages and improved living conditions for the workers—the American workers who remained at their posts insisted that they already had these and the evidence adduced by the steel companies verified the statement—but an attempt to deliver the steel mills and factories into the hands of the radical foreign element among our industrial workers. It was, in a word, but the first step toward the seizure of the means of production by labor.

And the public, with the example of Russia before it, could not and did not sympathize with the strikers.

With some notable exceptions the strike was a bloodless one. This was due principally to the prompt action taken by the local public authorities at the various points affected to prevent trouble and to the refusal of the steel companies generally to attempt to bring in strike breakers. Because of this passive attitude on the part of the employers the strikers were robbed of the opportunity to make sufficient trouble to force intervention by the Government.

In no previous conflict between capital and labor, it is likely, has the public had as excellent an opportunity of judging the rights and wrongs as in the steel strike. One day after the struggle eventually began the Senate of the United States passed a resolution instructing the Committee on Education and Labor to investigate the strike and report on its causes. The committee conducted public hearings in Washington where Judge Gary and a number of loyal workers were heard on the side of the Steel Corporation, while Foster, Fitzpatrick, Gompers, and other union leaders had equal opportunity, which they availed themselves of, to present their case. The committee also visited the affected districts to secure first-hand evidence on conditions there.

In an essentially fair and complete report, submitted to the Senate on November 8, 1919, the committee reviewed the claims of the strike leaders and of the Corporation.

While criticizing the steel companies on the question of too long work hours and suggesting that the six-day week could be extended to include all workers the report characterized some of the statements of the strike organizers as false and dismissed their claim of pauper wages, expressing the opinion that the employees of the steel industry were fairly well satisfied with wages received and that the question of wages was not persuasive at all in the consideration of a strike. The committee, in fact, in its own language found little to complain of as to conditions in general outside of long work hours.

On the other hand, the committee reported the underlying cause of the strike to be "the determination of the American Federation of Labor to organize the steel workers in opposition to the known and long-established policy of the industry against organization," and "the seizing upon this cause by some radicals who are seeking to elevate themselves to power in the A. F. of L."

On this point the committee further found that "behind this strike there is massed a considerable element of I. W. W.'s anarchists, revolutionists, and Russian Soviets," and expressed the opinion that the American Federation of Labor had "made a serious mistake by permitting the leadership of this strike movement to pass into the hands of some who have entertained most radical and dangerous doctrines."

Still further pursuing this point the committee reported: "There may be, in view of the radical utterances and actions of certain strike leaders, some warrant for the belief that the strike in the steel industry is a part of a general scheme and purpose on the part of radical leaders to bring about a general industrial revolution. The committee, however, do not go to that extent because they feel there were some real grievances." This, of course, is just what steel men and the greater part of the public believe.

While this report served to prove that the conclusions

arrived at long before by the great mass of the public were correct the strike was dying out before it was presented. In fact, the majority of the steel mills of the country had resumed nearly full operations by early in November. The strike gradually lessened in importance from the end of September and, although it was not actually called off by its leaders until nearly the middle of January it was to all practical purposes dead long before the end of the year.

The story of the Industrial Conference called by President Wilson in an effort to bring together the conflicting forces of capital and organized labor and to work out a new industrial scheme rightly belongs with that of the steel strike. The decision of the President was unquestionably due, to some extent at least, to the imminence of the strike, his plans for the Conference having been announced at the time when the union organizers were attempting to get recognition from Judge Gary. While the conference was not called, ostensibly, to deal with the particular situation it is obvious that Mr. Wilson, realizing what a danger the strike would be to the country's prosperity if it occurred, sought to avert it and at the same time to reduce to a minimum the danger of other conflicts between the two great opposing industrial forces. That he had the steel situation in mind was further indicated by his request to the labor leaders to postpone action until after the Conference—a request that was refused.

To the Industrial Conference the President invited a number of men supposed to represent the three great groups concerned in industrial disputes—labor, capital, and the public. The country's workers were represented officially only by the leaders of organized labor, Samuel Gompers, Matthew Woll, Frank Morrison and other prominent members of the American Federation, with some representatives of the railroad unions. The interests of capital were in the hands of the so-called employers' group which included representatives of various commercial bodies, of the railroads, and of

farmers' organizations. The so-called public group also included a number of employers, among whom were Judge Gary; the late Henry B. Endicott, the Massachusetts shoe manufacturer who had gained a reputation for the interest he took in the welfare of his employees, and others; social workers and writers such as Ida M. Tarbell and Gertrude Barnum; two prominent Socialists, Charles Edmund Russell and John Spargo. To these were added Dr. Charles W. Eliot, educator; Thomas M. Chadbourne and Gaven McNab, lawyers; Bernard M. Baruch, erstwhile stock-market operator but lately head of the War Industries Board, and several others.

Sincere as was the desire of the President to create amicable relations between capital and labour and equally sincere as was the attitude of the majority of the participants to the Conference to reach an understanding that would reduce to a minimum the danger of industrial disputes and establish a satisfactory method of settling them when they did arise, it was obvious from the outset that the Conference would be abortive; that a panacea for industrial ills would not be discovered by it.

It was unfortunate that illness prevented Mr. Wilson from taking personal charge of the proceedings. The influence of his high office might have prevented the disagreements that occurred and held the Conference together long enough to enable the participants to arrive at some basic points of agreement. But this was not to be.

It was also unfortunate that the Conference took place during a big industrial dispute, probably the greatest the country had ever faced. For although it was obviously convened to deal with industrial problems in the abstract rather than in the concrete, Samuel Gompers and the other union representatives at the very beginning demanded that one of its first actions should be the settlement of the steel strike.

This might readily have been foreseen. The labor leaders undoubtedly, by the time the Conference came together on October 6th, realized that in their conflict with the Steel Corporation and the steel companies generally they had engaged in a losing fight. At the very time strikers in large numbers were going back to the mills and the operations of the steel companies were steadily increasing. The continuation of the fight meant a total loss to the unions while arbitration would have permitted them to gain some of their points, or at least to yield gracefully and save their faces. They saw, or thought they saw, in the Industrial Conference, a means to force the Corporation to accept arbitration.

Defeated in their efforts to end the steel strike without sacrificing prestige among their followers with the assistance of the Industrial Conference, the labor leaders then made another demand—that the Conference, before proceeding further, recognize the principle of collective bargaining and the right of workers to be represented by men of their own choosing. This demand, fair as it seemed on the face of it, was so presented as to make it clear that by "collective bargaining" was meant bargaining through unions, and that by "representatives of their own choosing" was meant union leaders selected not by the men but by unions, and the employers insisted that, while the right of collective bargaining could not be gainsaid, the unions must recognize the exercise of this right through shop committees, a form of collective bargaining which has proved successful in many instances but to which unionism is firmly and irrevocably opposed.

And it was upon this rock that the Conference eventually split after several weeks of argument, notwithstanding the strenuous efforts of Franklin K. Lane, Secretary of the Interior, who acted as chairman. In justice to the unions, however, it must be said that, on the last day, before organized labor withdrew from the Conference, giving it its death-

Coils of Red Hot Wire

Annealing Wire

blow, Mr. Gompers presented a final resolution for the recognition of the right of collective bargaining without restriction. Had the employers' group accepted this resolution or had the union representatives given their opponents time to consider it, as the latter with good reason asked, even this difficulty might have been overcome.

And here it might be pointed out that John Spargo, Socialist and writer, offered a compromise resolution that was intended to satisfy all parties to the controversy. But unfortunately this resolution was presented while the Conference was in the death throes and never received the consideration it deserved. Mr. Spargo's resolution read:

"That the Conference proceed to develop and formulate a general programme which will clearly define and establish the right of organization and collective bargaining and furnish the basis for a constructive policy to direct the relations of employers and employees during the days immediately ahead."

Both sides, capital and labor, had agreed to collective bargaining in theory. They could not agree on its definition. Mr. Spargo's suggestion that the Conference "define" the phrase, it seems to the writer who was present through the entire proceedings, provided a basis on which both sides might have come together with some hope of establishing an amicable basis of agreement—if such a basis were humanly possible. It was the only resolution offered that at all tended to harmonize conflicting ideas.

While the labor leaders were battling for the immediate settlement of the steel strike by the Industrial Conference, Judge Gary, who it will be remembered was a member of the "public" group, read a prepared statement giving the Steel Corporation's attitude on this point. Judge Gary said:

I desire to make a brief statement in relation to the question under discussion as well as others submitted to this Conference. Further explanation of any vote I may register will probably be unnecessary.

Like other members of the Conference, I recognize that the public interest must always be considered as of the first importance; that all private interests must be subordinated.

I am heartily in accord with the desire of the President firmly to establish proper and satisfactory relations between all groups of citizens connected with industry, including of course what has been designated as capital and labor.

I believe in conciliation, coöperation, and arbitration whenever practicable without sacrificing principle.

I am of the fixed opinion that the pending strike against the steel industry of this country should not be arbitrated or compromised, nor any action taken by the Conference which bears upon that subject.

Also that there should be maintained in actual practice, without interruption, the open shop as I understand it—namely, that every man, whether he does or does not belong to a labor union, shall have the opportunity to engage in any line of legitimate employment on terms and conditions agreed upon between employee and employer.

I am opposed to a policy or practice which unnecessarily limits production, increases costs, deprives the workman from receiving the highest wage rates resulting from voluntary and reasonable effort, hinders promotion or advancement in accordance with merit, or otherwise interferes with the freedom of individual action.

As unorganized labor, which embraces the vast majority of working people, has no special representation in this Conference, I deem it appropriate to say that all labor should receive due consideration, and that it is the obligation and ought to be the pleasure of employers at all times and in every respect to treat justly and liberally all employees, whether unorganized or organized.

Thus, without accomplishing a single constructive result, the Industrial Conference ended. Labor, or rather the union heads, had endeavored to subvert it to promote their own ends and, failing in this effort, withdrew dramatically.

President Wilson did not abandon his hope of formulating a basis for the settlement of industrial disputes, however. He immediately called a new conference consisting of only one group, supposed to represent the public, which did not in-

clude any of the participants to the former conference, and this met and drew up a rather innocuous report. But as a factor in the steel strike the second conference might never have occurred and need not be considered here.

The strike dragged more or less wearily throughout the fall of 1919 and the early winter. Long before the end of the year it ceased to be an important factor in mill operations, and its final official calling off on January 10, 1920, was merely a formal procedure. Long before that date the whole country had realized that the labor leaders had overplayed their hands and had met their Waterloo. To all intents and purposes the steel strike was ended before the middle of November.

As it proved, the method adopted by Judge Gary in fighting the strike was the best. It consisted principally of permitting the public every opportunity of judging all aspects of the case and of standing pat on the fairness of the steel companies in dealing with their men. Had the Judge yielded one iota to the demands of the labor organizers this would but have convinced the radical element in labor that they held the whip hand over capital and would have encouraged them to further excessive demands. Had the Judge, on the other hand, attempted to fight the strike by meeting violence with violence this would have alienated public sympathy. And in the final analysis public opinion is the most important factor in settling industrial disputes.

As an aftermath to the strike came the "investigation" by the Interchurch World Movement, an organization at the head of which were a number of bishops and other churchmen. A committee of this organization visited Pittsburgh and other points and presented a statement, but it was of a character entirely biassed against the Corporation, its members, in their investigation, having apparently given heed only to the arguments of Messrs. Foster and Fitzpatrick.

In the report of this committee stress is laid on the long working hours of the man in the steel mill, ignoring the fact that steel companies generally have made great effort to reduce the average of daily work and that only a comparatively small percentage of the men work twelve hours. Further, the committee attacked the Corporation on the question of wages which it declared to be below the sum required for American standards of living, its statements failing to harmonize with the findings of other obviously unprejudiced investigators including the Senate Committee on Education and Labor, which found otherwise.

In standing on a just basis and refusing to follow the easier way of compromise the Steel Corporation performed a service not to itself or to the steel trade alone. It performed a service to the whole country and even to the world. It gave the first decided check to the growing strength of radicalism which was then threatening to overwhelm America and prevented a situation which would have thrown the country into the same condition that has for some time prevailed in Russia.

The evil of unchecked growth of unionism is illustrated by what is happening in England at the present writing. The Corporation saved this country from similar evils. By its stand it established the right of every worker to earn a livelihood whether or not he belongs to a union.

CHAPTER XV

HELPING UNCLE SAM WIN THE WAR

WHEN Uncle Sam, in the stirring days of 1917, was drawn into the vortex of the Great War he mobilized his industrial and financial strength just as truly as he mobilized the flower of his young manhood and called upon it to spare no effort or sacrifice to ensure that his standard should be carried, as it always had been in the past, to victory.

And corporations, manufacturing and other, responded loyally for the most part. A few, a very few, put profit above patriotism and haggled over prices and percentages, but the great mass of American business men showed by their actions that they regarded themselves as soldiers of the United States and put their resources and their organizations without question at the service of the Government. They were the men behind the men behind the guns.

From among so many who did their duty, and more than their duty, it would be invidious to pick out for particular praise or commendation a single one. The war work done by such concerns as American Can, American Car & Foundry, American Brake Shoe & Foundry, Dodge Bros. Manufacturing Co., T. H. Symington Co., and many others must be a matter of deep satisfaction not only to their managements but to all who believe that American business men are not swayed solely by the desire to gather in dollars. And among those concerns whose managements asked themselves in regard to war activities not what profit there was in them but how best they could serve their country and help win

the war, none was more ready and loyal than the United States Steel Corporation.

From the date of the entrance of the United States into the war until the armistice the Steel Corporation spent more than $200,000,000 for war plant, and from the beginning of the war in 1914 more than $300,000,000 for plant and other properties for war purposes. Most of these expenditures were made at the request of representatives of the Government at a time when business caution would have advised against them and at a cost estimated at about $103,000,000 above pre-war cost. Some of the plants erected during the conflict will never be profitable in peace times and others will not be for a long time. But profit was not in question.

And the Corporation shipped for war purposes nearly 18,500,000 tons of steel, nearly 28,000,000 gallons of benzol, and more than 21,000,000 pounds of ammonia sulphate and liquor intended directly for war uses. Much of its other output unquestionably went into war material in one shape or another, but indirectly, and so cannot be checked up.

Perhaps the most interesting single feature of the Corporation's war activities was the contract which it undertook early in May, 1918, to erect for the Government the largest big gun plant in the world on Neville Island, in the Ohio River, near Pittsburgh. This plant was to have a capacity to forge fifteen 14-inch guns, and to machine and finish twelve a month. Part of its capacity was to be devoted to the manufacture of even larger cannon—up to 18-inch.

The estimated cost of the plant and equipment was $150,000,000, this figure not including the cost of the guns.

To the fulfillment of this enormous contract the Corporation bent a great part of its energies. And for its work and the work of its officers it agreed to accept an annual remuneration of one dollar—since neither individual nor corporation can make Uncle Sam a present of his services. So the United

States Steel Corporation was one of a few, a very few, companies which may be reckoned among the dollar-a-year war workers of the United States.

The Neville Island plant was, as has been said, to have been the largest big-gun plant in the United States. The plans called for a complete integration of operations including the erection of a big steel plant to supply the necessary raw material. The site chosen was an excellent one for the purpose, being located well toward the centre of the country with all-water transportation to the Gulf of Mexico and rail connections with every part of the United States. Besides the manufacture of big guns the Neville Island plant was to be equipped to make 40,000 shells, of 8-inch and larger sizes, a month.

Immediately upon the signing of the contract the Steel Corporation set about the erection of the plant. Ground was broken and a number of buildings of various kinds erected. But the construction of the giant plant was necessarily a question of time. It is doubtful if, under the most favorable conditions, it would have been possible to begin operations until well into 1919 or to turn out a single gun until the beginning of 1920, and the armistice intervened on November 11, 1918, this causing the cessation of the work. The huge project, it might be said, died before it was fully born. Such equipment as had already been placed was moved to government arsenals elsewhere and the buildings dismantled. And the war history of Neville Island came to an end. What work was done, and property purchased on the final settlement, cost the Government something like $11,000,000.

The abandonment of the project seems a pity. True, the winning of the war seemed to make the plant unnecessary, but, in view of the excellent location of the island for an arsenal, its position in juxtaposition to Pittsburgh, the great steel centre, and the work actually done and expenditures

already made, it might be held that it would have been better to continue the work at least sufficiently to give the Government a small plant which could be expanded if need ever arose again, a nucleus for a great-gun factory in the event of another war. This could have been done at a comparatively small additional cost. But, as Kipling says, that's another story.

Of all the needs of the Allies and the United States in the summer of 1917 none was quite as urgent as ocean tonnage. The Hun U-boats at that time were sinking ships and cargoes at a rate that the governments concerned did not even dare to make public. The number of bottoms operated by the Allies was being sadly depleted, and without ships England faced something very like starvation; men, munitions, and food supplies could not have been sent to the front. On the speed with which the shipyards of this country and Great Britain could turn out steamers depended, more than upon any other factor at the time, the victory or defeat of the Allied arms.

How the United States met the emergency is a matter of history. The fabricated ship was evolved and made a success. To secure vessels, the Government placed contracts under which it stood the entire expense of plant construction with payment for the vessels on a cost-and-percentage basis. But the Steel Corporation, although it probably could have secured similar terms, chose rather to build and equip yards at its own expense, relieving the Government of this expense. Two shipyards were started, one at Kearny, N. J., and the other at Chickasaw, near Mobile, Ala.

Shipbuilding, of course, may be regarded largely as a commercial venture on the part of the Corporation. But it is certain that it is a venture that it would never have undertaken at the time, because of the immense building cost then obtaining and the future uncertainties, had it not been for the urgency of the need of the country and, indeed, of civiliza-

tion. As Judge Gary truly said in his report to stockholders for the year 1918: "these plants were conceived and undertaken solely as war measures."

Both the Kearny plant, operated by the Federal Shipbuilding Co., a subsidiary of the American Bridge Co., and the Chickasaw plant, operated by the Chickasaw Shipbuilding & Car Co., a subsidiary of the Tennessee Coal, Iron & Railroad Co., were designed to build 10,000-ton vessels. The Federal plant has twelve ways and the Alabama yard six, with a combined capacity of thrity-six ships a year.

Once having decided on its shipbuilding venture the Corporation did not lose time in setting about the work. The New Jersey plant was the first one decided on and ground was broken for the plant on August 1, 1917. By November 15th the first keel was laid and the first vessel, the *Liberty*, was launched on June 19, 1918, and finished and turned over to the Shipping Board, which had charge of all American shipping during the war, on October 5th of the same year.

Chickasaw came later. This yard was started in November, 1917, and the first ship to leave its ways did not do so until December 29, 1919, or some time after the armistice. The vessel, the *Chickasaw City*, was purchased by the United States Steel Products Co., the Corporation's export subsidiary, and put into service carrying steel products to different parts of the world.

At the time of writing six vessels have been launched from the southern yard, all for the Products Co., while the Federal yard has launched and delivered a total of forty-four. Of these thirty have been delivered to the Shipping Board and nine of the remainder have been taken over by the Products Company, the other five having been sold to other concerns.

Although it is dubious whether, as a commercial undertaking, the two shipyards will prove very profitable immediately, there is little reason to doubt that they will eventually

justify the expenditures on them, occasioned by the war, from the purely business standpoint. They are both favorably located for cheap manufacture and, making fabricated ships, can naturally build at satisfactory costs in comparison with yards constructing steamers under the old methods.

For there is every reason to believe that the fabricated ship has come to stay. It has fully proven its right to existence in competition with other vessels. Its methods of construction are standardized, which is what made the cheap Ford car possible, and standardization should eventually mean as much saving in ship as in motor-car building.

Whether the war had come or not the erection of shipyards by the Corporation was a natural development sooner or later. It was in line with the plans laid down by the Corporation's founders. And it was also part and parcel of the big company's export programme. With its exports mounting up to the two-million-ton mark annually the Corporation had necessarily either to own or charter a large number of vessels. Ownership, of course, was better in the long run and it was, for a concern like U. S. Steel, with its big steel plants and experienced organization, cheaper to build than to buy the vessels.

The Steel Products Company's need of a large number of vessels—before the war it owned nine and chartered constantly from thirty to forty—itself assures a steady demand, at least for a time.

If the future of the fabricated ship is assured the Corporation, in its shipbuilding programme, starts with an advantage over most competitors. Now that it appears the great Hog Island yards, with their fifty ways, will be abandoned, the Federal and Chickasaw plants will be the largest fabricated shipyards in the world—and they should be among the lowest cost of all yards.

But the assistance which the Corporation rendered the Government in respect to providing ships to meet the war

emergency was not confined to the erection of the two yards and the fabrication of ships there. Long before the yards were built, or even conceived, the American Bridge Co. was pioneering in the production of fabricated ship parts and the great part of the steel that went into the vessels built at Hog Island and other plants was supplied by that company and by the Tennessee Coal, Iron & Railroad Co., which put up plants specially for the purpose. Before the close of 1918 these two subsidiaries of the big company had shipped the steel for seventy complete hulls to various yards.

No other metal plays such an all-important part in modern warfare as does steel. Warships, transports, big and field guns, small arms, shells, gun mounts, and other munitions are made entirely or almost entirely of the metal. And when Germany first threw down her gauntlet to the civilized world the Allies found it necessary to depend to a great extent on American mills for a supply of this vital war metal. And the manufacturers of the United States responded, among them the Steel Corporation.

The Corporation did not go into the manufacture of munitions directly. It supplied the raw material for them to other manufacturers, and it did turn out a large number of shell forging, mortars, and later, gun forgings. From August 1, 1914, to April 1, 1917, or just before this country allied herself with the European enemies of Germanism, the Corporation supplied a total of 6,057,640 tons of steel intended for the manufacture of munitions of one kind or another. Part of this went to manufacturers here who were making shells, but most of it was sent directly abroad.

As soon as the United States became herself engaged in the great conflict the authorities at Washington, realizing that steel supply was of paramount importance, requested Judge Gary, in his capacity of president of the American Iron & Steel Institute, to form a committee to mobilize the

iron and steel industry of the country on a war footing and to take general charge of the supply of the metal. This Judge Gary did with the hearty coöperation of other steel manufacturers. Practically the entire steel production of the country was put unreservedly at the disposition of the Government and no effort was spared to secure and maintain maximum production.

And here it might not be out of place to remark that the situation as it then existed presented the peculiar spectacle of a government depending to a large extent upon the loyalty and coöperation of a business organization, and availing itself of the use of its resources, financial and other, while this very government was attempting in the courts to destroy this same corporation. We also saw the Government's attorneys demanding that the Court which had to make the final decision in the matter put the proceedings over until after the war. In a sense the Government did not dare go ahead with the case as, had the Court granted its petition and ordered the Corporation dissolved, the result would have been a disaster greater than the loss of a battle to the Allied arms.

The Government, it has been suggested, availed itself of the strength and resources of the Steel Corporation. Two instances of this will illustrate how. Tin plate, the steel product used to make cans for food and other perishable goods, needs in its manufacture a large supply of pig tin and of palm oil, neither of which products is obtainable in the home markets. Tin plate was declared a war essential and supervision of its output taken over by the Government which found itself promptly faced with the necessity of securing a steady supply of both pig tin and oil. But the difficulty was met by putting the matter in the hands of the Corporation which, subject to arrangements with the British Government which controlled the output of these two products, took full charge of importations, arranged a steady

supply, and financed the operations out of its own exchequer, distributing the oil and tin to other manufacturers at actual cost.

And then there was Neville Island.

After the United States entered the war the Corporation's output of war steel increased enormously. From April 1, 1917, to the end of December of the following year it had exported to the Allies 7,292,950 tons of steel and supplied the United States Government and munition manufacturers here with 9,104,440 tons, making its total of war steel 16,397,390 tons.

So many and so varied were the Corporation's activities in the war that only the briefest synopsis of them can be given here.

Of equal importance with steel, as a necessary adjunct to modern warfare, are the chemicals that go into the manufacture of trinitrotoluol and other explosives, gases, etc. And the Corporation's contribution toward the winning of the war was no less important in this particular than was its output of steel products.

These explosive bases are derived from benzol and toluol, which in turn are derivatives of coal extracted in the manufacture of coke. And long before the war cloud had arisen the Corporation had been pioneering in the coke by-products industry. It had for years been building plants to convert into valuable chemicals the gases and oils formerly wasted in the manufacture of coke. And the work it did in these early years along these lines formed a foundation on which could be erected rapidly a great explosive industry.

Prior to the war, the big company had made no effort to produce benzol and the other bases for dyes and explosives. It had confined its activities, in respect to coke by-products, to saving surplus gas which was used for the operation of its own plants and to producing tar and ammonia sulphate. But with the plants already equipped for these purposes, it

was a simple matter to make the necessary installations for the extraction of benzol and other light oils and the experience gained at those plants was of invaluable assistance in constructing and operating complete new equipment at others.

Of the Corporation's total coke by-products capacity today, consisting of 2,992 ovens with an annual capacity of 11,960,200 net tons of coke, 131,805,500 gallons of tar, 174,960 net tons of ammonia sulphate, 99,550,900 cubic feet of gas, and 45,785,000 gallons of benzol and other light oils, 53.6 per cent., or more than half, was installed under war pressure, much of it at inflated cost, for patriotic rather than for commercial reasons.

Actual expenditures by the big company in this field subsequent to the commencement of the World War aggregated $62,000,000 as compared with about $16,000,000 prior to August 1, 1914. These figures reflect the increased cost of construction due to war conditions, and make it easy to believe the assertion that much of the work done would never have been undertaken had it not been for the urgent need of the United States and the Allies.

When the war started, the Steel Corporation owned 1,452 by-product coke ovens, of which 120, at the Benwood, W. Va., plant were operated under a lease with the Semet-Solvay Co., this lease having been operative when the Corporation was formed. Another 212 ovens were acquired when the Corporation purchased the Union Sharon Steel Co., and the remaining 1,120 were constructed by the Corporation itself at its Joliet, Ill., Gary, Ind., and Fairfield, Ala., plants. These ovens had an annual capacity of 5,545,500 tons of coke, 44,888,400 gallons of tar, 66,750 tons of sulphate of ammonia, and 45,472,900 cubic feet of gas.

Between August 1,1914, and April 6, 1917, the Corporation installed an additional 1, 118 ovens, of which 90 were at its Duluth plant, 640 at Clairton, Pa., 208 at Lorain, Ohio, and

180 at Cleveland, Ohio. These new plants were equipped to produce benzol, and at the same time, the plants existing prior to the war were similarly equipped.

Since April 6, 1917, an additional 140 ovens have been installed at Gary, bringing the capacity of that plant to 700 ovens, an additional 128 at Clairton, and 154 at Fairfield, Ala. In the last two instances, the construction of the plants was made in response to direct requests of the Government, although the Corporation bore the entire expense. At the end of the war the big company had a capacity of about 40,000,000 gallons of benzol, etc., since increased to the figure already given, 45,785,000.

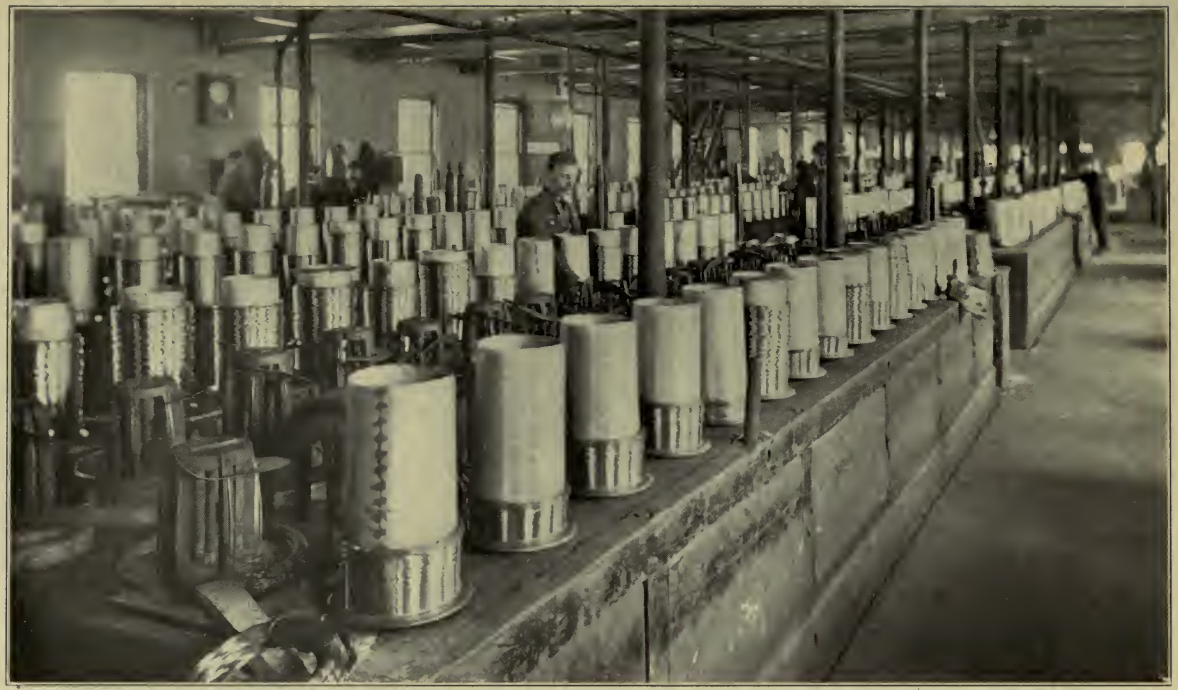
The Corporation's by-products ovens constitute 25.2 per cent. of all such ovens in the United States. Its actual production is somewhat higher than this percentage, which indicates how valuable were its activities along these lines in the prosecution of the war.

Although constructed largely to meet the then-existing emergency, this capacity serves a valuable end under peace conditions. In fact, as suggested elsewhere in these pages, it is only a question of time when the old wasteful beehive coke process shall have been consigned to oblivion and the newer by-product method used exclusively. Benzol, one of the principal war products, is used commercially as a motor fuel, in the manufacture of dyes, in the rubber industry, and for the purpose of enriching illuminating gas. Ammonia is used as a fertilizer (in the form of sulphate), in refrigeration, and in the chemical industry. Tar is used for heating purposes in the manufacture of steel, and for distillation by which are recovered carbolic oils, used for disinfecting; creosote oil, used as a wood preservative; anthracine oil, used in making certain dyes; and pitch, for road making, roofing, etc. The surplus gas generated in the process is used, as stated already, for heating purposes in the manufacture of steel and for municipal gas uses.

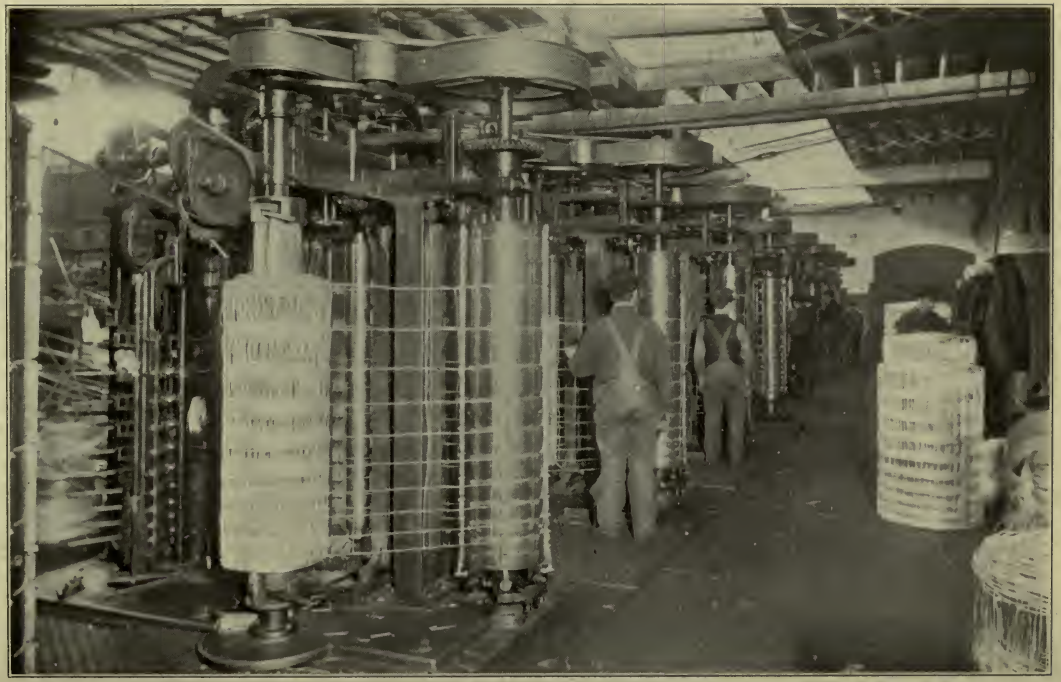
Further, if the day comes when the United States will have to draw the sword again, the big company's capacity of coke by-products will be of immense military importance.

The work done by the Corporation in extending its capacity for war purposes covers too wide a range to be detailed here. Besides the activities already outlined, it included the erection at Gary of a gun-forging plant for field guns and howitzers and, at the same plant of new mills for rolling projectile steel. At Chicago, four electric furnaces were installed to produce special steel for gun forgings and other military uses; at Homestead, the armor-plate department already in existence was enlarged and new facilities installed to make forgings for gun carriages. At the Homestead and Schoen plants of the Carnegie Steel Co., and the Ellwood and Christy Park plants of the National Tube Co., shell-forging equipment, giving an annual capacity of 4,000,000 shells, was constructed, and at the last-named plant machinery was also put in for making torpedo and submarine air flasks, gas bombs, trench mortars, and other war material. At various plants of the American Steel & Wire Co. machines were installed to make special barbed wire for trench use and some of these plants were equipped to manufacture rope for submarine nests and mines, and a number of other Allied uses. These are only a few of the more important of its war-manufacturing activities.

But the great Corporation's war work was by no means confined to manufacturing of military material. In no case was it called on to assist the Government in any way without prompt and generous response. Its ships on the Great Lakes were used in training naval reservists. It took charge of the work of delivering at Montreal and Quebec vessels commandeered by the Shipping Board on the Great Lakes. These vessels had to be cut in two to enable them to pass through the locks. It coöperated with the United States Food Administration in the movement of grain and other



Drawing Fine Wire



Making Wire Fencing

commodities vital to the successful prosecution of the war. It turned over to the Government seven ocean-going steamers and five vessels of its Great Lakes fleet. It gave leave of absence to over two hundred of its officials and experienced employees, to enable them to devote themselves to governmental, Red Cross, and other work during the conflict. And, incidentally, its service flag carried 34,407 stars.

Financially, it responded to the Government's call with the same enthusiasm it displayed in meeting war-production needs. How generous were its subscriptions to the various loans is indicated by the fact that although they were reduced materially on allotment, the Corporation and its subsidiaries, at the end of the war, held bonds of the first four loans aggregating $97,134,900. In addition to this amount, it was carrying, for account of employees on partially paid subscriptions, another $24,171,000 and had turned over, on fully-paid subscriptions, to employees, $6,645,000. Its allotment of the Victory Loan was $25,682,300.

In the annual report for 1918 it was stated that the Corporation's subsidiaries had purchased a total (not counting exchanges and re-issues) of $352,340,500 of United States Treasury certificates.

Finally, it subscribed to various war funds, raised by the Red Cross, Y. M. C. A., Salvation Army, Knights of Columbus, and United War Work Campaign, a total of $7,375,662, and declared a dividend of 1 per cent. on its common stock, amounting to $5,083,025, in July, 1917, for the particular purpose of aiding stockholders to contribute to the Red Cross.

Since the close of the war the Corporation, early in 1919, gave evidence of its desire to coöperate with the Government in deflating the high cost of living, even although this meant the sacrifice of a substantial part of its possible profits. For more than a year past it has played a lone hand in this respect, maintaining a scale of reduced prices in the face of a

strong market. Yet it is questionable whether this policy will not eventually prove a profitable one. In fact, indications are not lacking at present that such is likely to be the case.

Of course, United States Steel made large profits out of the war, both while the United States was a spectator and while we participated in the struggle. But always its officials put patriotism before profits. And if ever again the need arises, it is a safe prediction that the immense capacity and financial strength of the Steel Corporation will be all the time and unrestrictedly at the service of Uncle Sam.

CHAPTER XVI

THE MIDDLE PERIOD—1907–1914

ALTHOUGH the business depression consequent on the panic of 1907 seriously affected earnings of the Steel Corporation in the closing months of the year, the big company was able, as a result of the boom conditions that preceded the financial catastrophe, to report the largest earnings it had till that time shown. Total earnings were $160,964,673.72, and a net balance was left for dividends of $104,565,563.76. After the payment of the dividends, the common being maintained at the established rate of 2 per cent., and the appropriation of $54,000,000 for property additions, a net surplus of $15,179,836.76 remained.

In the appropriations for additions was included a sum of $18,500,000 for the continuation of the work being done at Gary, making the total amount appropriated for this purpose to the end of 1907, $50,000,000. During the year the work of building the new steel city progressed rapidly and $19,316,555 was added to the $4,632,202 expended the previous year.

The last two months of the year showed the effects of the business depression, earnings of the last quarter, net for dividends, being only $18,614,416, compared to $28,758,142 the three months preceding. But it was not until 1908 that the full force of the storm was to be seen. In the first quarter of this year net profits applicable to dividends dwindled to $8,854,297.37, compared with $27,031,008.20 a year previous, and second-quarter profits were $9,042,027.55 against $30,843,512.61 in the same period in 1907. A striking

comparison of the difference in trade conditions that occurred in the twelvemonth is afforded by the following statistics.

	1908	1907
Gross sales	$482,307,840.34	$757,014,767.68
Steel ingot production	7,838,713 tons	13,342,992 tons
Finished steel production	6,206,932 tons	10,564,537 tons
Number of employees (avg.)	165,211	210,180
Net earnings	$91,847,710.57	$160,964,673.72
Net for dividends	$45,728,713.70	$104,565,563.76

No special appropriations were made out of 1908 profits and a surplus of $10,342,986.70 was thus shown for the year after the dividend payments. However, such an appropriation appeared to be unnecessary as the Corporation already had a large reserve fund for the most important work underway, the building of the city and plant at Gary. On January 1, 1908, the balance on hand for this purpose was $26,051,242.62, and there was spent on the work $18,848,472.19 during the year, so that at the start of 1909 there was a balance of sufficient size to continue the work for several months.

During the year 1908 the bonded debt of the Corporation, which had been increased from $564,670,876 at the end of 1906 to $602,320,511 a twelvemonth later, chiefly on account of the issuance of securities for exchange for Tennessee Coal & Iron stock, was reduced to $594,865,534.

Among the important items of expenditure for 1908 is found a sum of $3,460,993 which was employed in modernizing the plants of the Tennessee company acquired the previous year. This was the beginning of a series of large expenditures extending over many years, and all for this purpose. Up to the end of 1914 approximately $20,180,092 had been spent on this work, most of it coming from the general funds of the Corporation and not from the earnings of the southern subsidiary itself.

To what extent the acquisition of the Tennessee company affected the Steel Corporation's capacity is shown in a table submitted in the report to stockholders for 1908, the figures given being as of the end of the year:

	BLAST FURNACE PRODUCTS	STEEL INGOTS	FINISHED STEEL
	Tons	*Tons*	*Tons*
Capacity April 1, 1901	7,440,000	9,425,000	7,719,000
Purchase of Union and Sharon Cos.	1,228,000	1,258,000	1,103,000
Tennessee purchase	1,000,000	500,000	400,000
Additions made by different Cos. after acquisition	5,322,000	5,887,000	3,678,000
Capacity January 1, 1909	14,990,000	17,070,000	12,900,000

This report also states that although the total steel capacity of the Corporation had been increased by 2,306,000 tons during 1908 its capacity for the making of Bessemer steel had decreased 746,000 tons, open-hearth capacity increasing 3,052,000 tons. These figures illustrate sufficiently the change then occurring in the steel trade from the old Bessemer to the new open-hearth process.

An even more striking illustration of the manner in which open-hearth steel has been displacing the older Bessemer process in recent years is afforded by the figures of the American Iron & Steel Institute. In 1880 open-hearth production was only 100,851 tons against 1,064,262 tons of Bessemer. A decade after Bessemer production was 3,688,871 tons compared with 513,232 tons of open-hearth, and in 1900, 6,684,770 tons of Bessemer were turned out by the steel mills of this country for 3,398,135 tons of open-hearth. By 1907 the two processes of steel making were running a close race for popularity with consumers, open-hearth production being 11,549,736 tons in that year, and Bessemer 11,667,549 tons. In every subsequent year open-

hearth production has been the larger, as shown by the following figures of the country's production:

YEAR	BESSEMER	OPEN-HEARTH
1908	6,166,755	7,836,729
1909	9,330,783	14,493,936
1910	9,412,772	16,504,509
1911	7,947,854	15,598,650
1912	10,327,901	20,780,723
1913	9,545,706	21,599,931
1914	6,220,846	17,174,684
1915	23,679,102	8,287,213
1916	31,415,427	11,059,039
1917	34,148,893	10,479,960
1918	34,459,391	9,376,236
1919	26,948,694	7,271,562

Business conditions gradually bettered throughout 1909, although the so-called open market that existed in the steel trade resulted in an average of prices during the year somewhat lower than in 1908. Nevertheless, increased production caused a marked and gradual gain in the earnings of the big Corporation, which from $22,921,268.75 in the first quarter grew to $29,340,491.62 in the second quarter, $38,246,907.43 in the third, and $40,982,746.14 in the closing three months.

Total earnings in 1909 were $131,491,413.94, and after all fixed charges had been met, dividends paid, and a special appropriation of $18,200,000 set aside for new construction, etc., a surplus of $15,321,918.04 was carried to profit and loss. The bonded debt of the Corporation in 1909 was increased by $12,718,639.43 to a total of $607,584,173.72, there having been issued by the subsidiary companies bonds to a total of $21,976,500, and bonds totalling $9,257,860.57 having been redeemed.

The year's operations resulted in a production of 13,355,189 tons of steel ingots and 9,859,660 tons of finished steel products. The total volume of business was reported at $646,382,251.29.

On the steel plant and city of Gary $11,081,367.80 was spent, making the total expended on the project to December 31, 1909, $53,878,597.37. Gary was now a steel-producing centre. Early in the year steel rails were turned out there and shortly after the close of 1908 and later in 1909 several of the steel furnaces and other finishing mills had been placed in operation. About this time it was decided that two of the other constituent companies of the corporation, the Sheet Tin Plate and Bridge companies, should erect plants at Gary, which plants are now in operation and have been for some time.

About the middle of 1910 the wave of improvement that had brought better business and profits to the steel companies began to slacken. The effect was not very immediate and the year, as a whole, was one of the best experienced by the Corporation prior to the war boom. Earnings reached a total of $141,054,754.51, but a fall in quarterly profits from $40,170,960.83 in the quarter ending June 30th, to $25,901,-729.87 was sufficient to show the downward tendency in conditions affecting the trade.

Gross business aggregated $703,961,424.41, and production reached its high-water mark, 14,179,369 tons of ingots and 10,733,995 tons of finished steel being turned out by the plants controlled by the Steel Corporation.

Bonds to a total of $17,392,752.14 were redeemed and $6,945,237.50 issued making the outstanding bonded debt of the Corporation and its subsidiary companies on December 31, 1910, $597,136,659.08. Some $16,000,000 was expended in further work at Gary bringing the total outlay on the plant, city, and terminals there to $69,978,695.15, of which $60,203,189.22 was financed from the funds of the parent corporation and the balance by various subsidiary companies, including the Bridge and Wire companies, which began the construction of their new plants during the year.

Several important purchases of coal properties in the

states of Illinois and Indiana were made in the years 1909–1910. These gave the Corporation 742 acres of land and 55,624 acres of coal rights. The most important new development recorded at this period, however, was the beginning of work on the construction of another steel plant and city near Duluth, Minn. The site for this plant had been purchased as early as 1907, but the events of the year and the dullness that followed made it seem wise to postpone the project. The more favorable conditions at the beginning of 1910 warranted its being proceeded with, and so the matter was put in hand, and at the end of the year $1,715,517.70 had been spent on the new plant.

In accordance with its policy of permitting its workers to share in the better earnings resulting from improved business conditions the Corporation, in 1910, announced another advance in wages, affecting the greater number of its employees who, throughout the year, averaged 218,435. The increase averaged something over 6 per cent.

Several factors operated adversely against the Corporation, from a financial standpoint, in 1911. The decline in business noted in the late months of the preceding year continued through and well into 1912, tonnage fell off and prices dropped with it. In May, 1911, the Republic Iron & Steel Co. precipitated matters by announcing a drastic reduction in the price of bars, the most important steel product, and this led to general price cutting, affecting every steel maker. It is worthy of note, however, that the conditions that now prevailed had nothing of panic in them. The business world seemed merely to be hesitating, to be timorous about making new ventures, to question the future. Perhaps the real reason was the world situation ripening for the Great War, for it is noticeable that, although conditions over the end of 1912 and into 1913 were good, this hesitancy was still in evidence, something ominous seemed to hang over the world of business and finance. It is likely that some of the leaders

of finance foresaw, even though dimly and uncertainly, the trouble that was brewing.

Earnings of the Steel Corporation in 1911 were $104,305,-465.87, the four quarters making a comparatively even showing. After the payment of dividends only $4,665,494.78 was left for surplus. Dividend requirements, however, were considerably larger than they had been in previous years. The rate of disbursement on the common issue had been increased to 4 per cent. in 1909, and to 5 per cent. in 1910, at which rate it continued until the latter part of 1914.

Production in 1911 fell off to 12,753,370 tons of ingots and 9,476,248 tons of finished steel products, and the gross volume of business declined to $615,148,839.79. The number of employees also grew less, the average number employed in the period being 196,888.

Another increase in the bonded debt was reported, new securities totalling $33,416,000 being issued, and $9,498,-359.46 being redeemed. The bonded debt of the big company on December 31, 1911, stood at $621,054,299.62.

Capital expenditures reported for the year included $7,939,813.46 at Gary, bringing the total for this project to $78,258,508.61; $17,707,280.79 expended for the acquisition of new coal properties in the Connellsville region of Pennsylvania; $5,069,983.65 spent on the Tennessee properties, and $1,437,518 spent on the new Duluth plant.

The two most important events of the year were the decision of the directors of the Corporation to cancel the Hill Ore lease and the inception of the Federal suit for the dissolution of the big company under the Sherman Anti-Trust Law. Both of these events took place on the same day, October 26th. As the Hill lease has been discussed at length in a previous chapter, and the facts connected with the dissolution suit have already been told, they will not now be gone into.

Toward the close of the year just reviewed there was a

gradual increase in the volume of steel buying. The railroads, which had been consuming very little of the metal—and the roads are the largest customers of the steel companies—began to buy in something like normal proportion and continued to do so until the spring of 1913. Other consumption also showed more activity, and under the impetus of this buying prices for steel products gradually advanced. The Corporation's earnings, however, did not immediately reflect this betterment, the first quarter of 1912 showing net profits from operations of only $17,826,-973.28, but a steady advance was recorded until $35,191,-921.82 was reported for the last three months of the period.

For the year net earnings of $108,174,673.12 were made and a balance of $3,605,247.37 was carried to surplus. The bonded debt of the Corporation on December 31, 1912, showed an increase of $22,482,881 from a year previous, bonds and mortgages totalling $32,428,246.50 having been issued and $9,906,365.47 in funded debt having been redeemed. The bonded debt of the big company and its subsidiaries at the end of the year stood at $643,537,180.65.

Production in 1912 amounted to 16,901,223 tons of ingots and 12,506,619 tons of finished steel. The total volume of business amounted to $745,505,515.48. Of this sum $494,-637,808 represented sales of steel and other products to customers outside the Corporation, $189,257,318 intercompany sales, and the balance earnings from transportation and other sources.

The main items in capital expenditures were as follows: Work at Gary, $1,725,052; Duluth plant, $2,676,066; Tennessee Coal, Iron & Railroad extensions, $1,833,094. The construction of the Gary plant was now practically finished and the plant produced 1,093,578 tons of pig iron, 1,669,389 tons of steel, and over 1,186,000 tons of finished products in the course of the year.

In view of the general betterment in business conditions it

was decided by the directors of the Corporation to erect a big plant across the Canadian border. A site for this plant had already been acquired at Ojibway, Ontario, opposite the city of Detroit. Work has proceeded and is proceeding slowly. The plant has not been completed but several millions have been expended in laying foundations and otherwise making general preparation for the big plant that will one day stand at Ojibway.

An attempt was made about this time to reduce the working hours of some of the employees from the twelve-hour to an eight-hour day. Such a course had been recommended by a special committee of stockholders appointed at the annual meeting in 1911, but the attempt was by no means an unqualified success, as the movement met with considerable opposition from the men themselves.

In the first nine months of 1913 generally satisfactory conditions prevailed in the trade, and earnings were consequently improved, although operating costs had again been increased by a general wage increase put into effect on February 1st of that year. The first quarter showed net earnings of $34,426,801.54; the second, $41,219,813.42; and the third, $38,450,400.03. A pronounced decline was reported in the final three months when profits fell to $23,084,-329.84. The good results of the earlier months were largely due to the big carry-over of business from 1912 and to the comparatively high average of prices received. For perhaps the first time in the history of the steel trade the railroads placed their orders for rails for 1913 delivery as early as the summer of the preceding year, and this went a far way toward effecting the results shown.

After a special $15,000,000 appropriation the Corporation showed a net surplus of $15,582,183.62 for 1913. No important bond issues were made in the period, and with $16,660,866.76 in bonds redeemed the total bonded debt was reduced to $627,366,681.47, a decrease of $16,170,499.18.

The total volume of business amounted to $796,894,299, of which $518,999,605 represented sales to outside customers; $211,910,441 inter-company sales, and the balance transportation and other business. The average number of employees was 228,906, the highest recorded so far, and production totalled 16,656,361 tons of ingots and 12,374,838 tons of finished steel products. The principal expenditures for capital account included $2,960,124.92 spent at Gary, $5,912,027.44 at Duluth, and $1,274,440.84 on the Tennessee plants. Fee title was also acquired during the year to certain ore properties previously worked on a royalty basis. This cost $11,670,181.87, of which $2,283,677.63 was paid in cash, and the remainder in notes of the Oliver Iron Mining Co.

We now come to 1914, the year which saw the beginning of the Great War, with its disastrous results on business generally, and on no line of activity more than the steel trade. The events of this year are too recent and too well known, too vitally important to all, to need repetition. Industry, in the middle of the year, was just beginning to struggle out from the depression that had begun in the latter half of 1913 when the sudden clash of arms paralyzed world money markets, closed the stock and other exchanges, closed or restricted operations at hundreds of plants of one kind or another, and threw thousands of workers out of employment.

The demand for steel, never very active at any time since about July, 1913, fell almost to a vanishing point, and earnings of the Corporation in the last quarter declined to the lowest point in its history, $10,935,635.36. Total earnings for the year were only $71,663,615.17, and, although the dividend rate on the common stock was reduced from 5 per cent. to 2 per cent. annually in the third quarter, and the dividend for the last quarter was passed, earnings were not sufficient to meet charges, and a deficit of $16,971,983.83 was reported.

The necessity for passing the dividend—and it was a pressing one—was keenly deplored both by the management of the big company and, naturally, by its stockholders. That payments would have been maintained had there seemed the slightest warrant for such a course seems to be beyond question as the directors realized that the wide distribution of the stock, and the fact that many of its shareholders were people of small incomes who looked to their Steel dividends almost with the feeling of security they would have reposed in good bonds, would make their action necessarily a great hardship to many. But there was no way out. Even had wages been reduced there did not, at the time, appear to be any hope that profits for a long time would meet requirements, and the conservation of resources was paramount. But wages were not cut. In the early part of 1915, with earnings running even lower than in the last quarter of 1912, the matter was considered, but a slight increase in business was seized upon as a warrant for the continuance of the old wage scale. The steel worker was saved, although the steel stockholder suffered.

Sales to outside customers in 1914 totalled only $380,228,143, inter-company sales $129,565,729, and other receipts made a total of $558,414,933—a decrease of over $238,000,000 from the previous year. Ingot production fell to 11,826,476 tons, and finished steel output to 9,014,512 tons, equal to about 62 per cent. of the gross capacity. Practically no change was shown in the bonded debt, which on December 31st stood at $627,238,417.26. The number of employees averaged 179,353.

So acute was the depression that the construction of the new Duluth plant was temporarily stopped in the fall of the year, and work was not resumed until well along in 1915.

In December, 1914, production of the Corporation's plants fell to the lowest point ever recorded. One of its largest subsidiaries operated through most of the month at only

about 15 per cent. capacity and another at 18 per cent. The general average of operations for the month was probably hardly over 20.

Thus we come to the close of the second or middle period of the Corporation's existence. The years which made it up were generally trying ones. At no time between 1907 and 1915, except to some extent in 1910, was there anything like real prosperity. And the close of the period saw industry practically suspended, aghast at the conflict that was shaking Europe to its very foundations, and threatening world credit.

But while these seven years, 1908-1914 inclusive, were not, on the average, prosperous for the Steel Corporation, neither were they years of stress. Industrial affairs over the greater part of the period proceeded along a rather monotonous level, but this was possibly an advantage. So far as United States Steel was concerned, these conditions gave it an opportunity to perfect its organization, work out economies, and extend its operations along carefully considered lines. So that when industry revived under the urge of war times the big company was able to take advantage of the situation and to reap large profits and pay big dividends to its stockholders.

For the Steel Corporation and for American industry generally conditions at the end of 1914 were as dark as could be imagined, but it was the darkness that comes before brilliant dawn.

CHAPTER XVII

THE WAR AND AFTER

NEVER did year dawn so black for American industry as did 1915. The financial world, stunned by Germany's unexpected attempt at world conquest, could see only the immense economic waste that war is. That the conflict in Europe could have a stimulating effect on American industry seemed unthinkable at that dark period, and industry as a whole seemed shaken to its foundations. Steel, the barometer of trade, naturally reflected this situation sharply.

At the close of 1914, as we have seen, operations of the Corporation's subsidiaries reached the lowest point on record and the new year brought with it no sign of early betterment. Hence it was natural that all except the most confirmed optimists faced the future with doubt if not with dread.

This situation reflected itself plainly in the big company's profits, which that January fell to $1,687,150. This proved to be the low point, however, a slight revivification of business beginning to make itself felt the following month, and being even more pronounced in March, when operations reached 60 per cent. capacity. But even then conditions were far from being satisfactory, earnings for the last month of the quarter aggregating only $7,132,081, and for the three months, $12,457,809.

But, difficult as it was to realize it at the time, the war was destined to bring to American business the biggest boom it had ever experienced. As the struggle developed the Allied powers had brought home to them sharply their

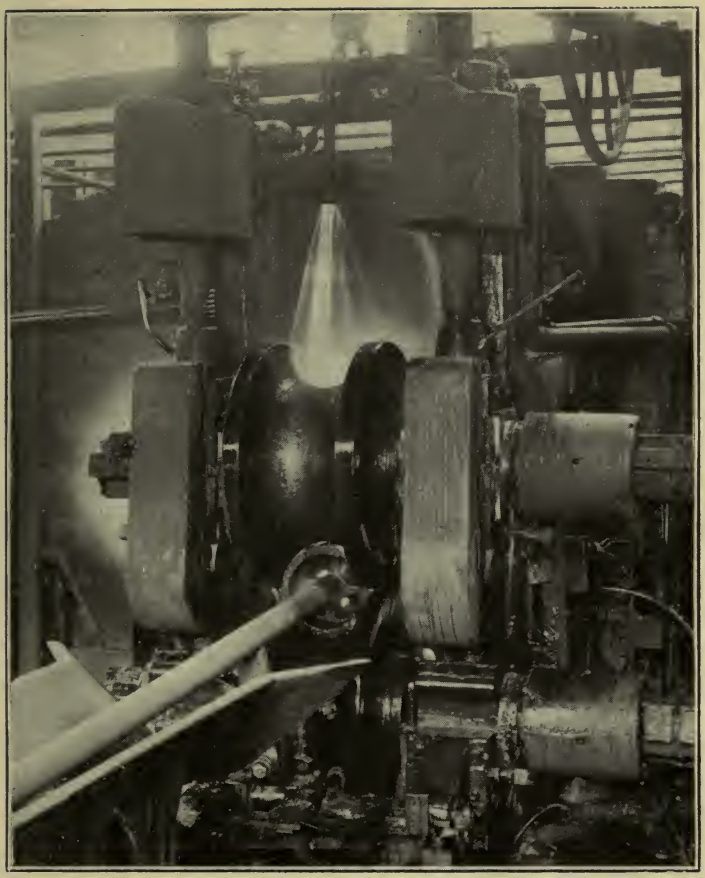
great shortage of war materials. Germany, preparing years before for the struggle, had at the start an immense preponderance of guns, shells, automobiles, airplanes, and other articles, and there was no hope of crushing the Kaiser's hordes unless and until the Entente could meet its foe on equal terms measured in material.

It had become a war of machines, a war largely of steel. And the Allies' production of steel and machines could not be brought up to the point necessary to make victory certain. There was no country but America to turn to for the needed supplies.

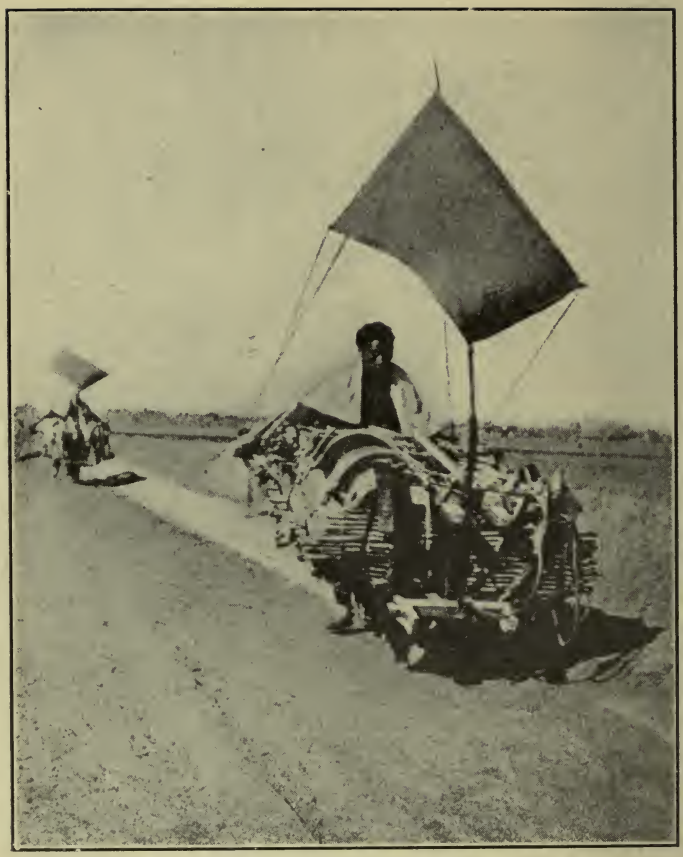
Wire was the first product which felt the stimulus of the new demand. Before the beginning of 1915 both sides had settled down to the slow warfare of the trenches, and for the protection of these hundreds of thousands of miles of barbed wire were necessary. England, although until the beginning of the twentieth century the principal steel-manufacturing country in the world, had never devoted much of her capacity to wire products, and even before the war had been in the custom of importing a large part of her need of this commodity from the United States. And in their extremity both England and France looked across the Atlantic for more and more of this particular product, and the wire mills of the Steel Corporation and other producers here began to increase output and to show improving earnings.

Then came the demand for shrapnel bars, steel for explosive shells, guns, automobiles, trucks, and almost every article used in modern warfare. Russia, attempting to move immense armies with inadequate railroad transportation facilities, began to ask for locomotives and steel cars in large numbers, as well as steel rails to run them on, and the export steel trade of this country grew to unprecedented proportions.

Before the middle of the year the Corporation was operating on 90 per cent. capacity and was sending abroad one



Making a Steel Tube



Steel Transportation by Man Power in China

third of all the steel it produced. In the best pre-war year foreign shipments had amounted to only 18 per cent. of the output of the big company's plants.

With the revival of the steel and Allied industries caused by the war demand domestic trade began to pick up, industry generally revived, and a spirit of optimism replaced the gloom that had been casting its shadow over the business world. As the trade balance of the United States for the first time in history reached and passed the billion-dollar mark it became plain that the war, great evil as it was, was making America rich. A boom was on.

How marked was the trade revival in 1915 is indicated by a comparison of the Corporation's earnings for the four quarters of the year: First quarter, $12,457,809; second, $27,950,055; third, $38,710,644; fourth, $51,277,504.

Keener and keener grew the war demand as the months rolled on. The Allies, calling more and yet more on their man power to fill up the gaps in the fighting line, found it increasingly difficult to meet the ever-growing need for war materials and leaned more and more heavily on our manufacturers. The price of steel, under the enormous buying power from abroad and the increased demand at home, advanced rapidly, nor did this advance let up until the latter part of 1917, when, the United States having at length united her fortunes with England, France, and the other countries defending civilization, prices were fixed by agreement with the Government.

Germany's submarine warfare tended still further to aggravate the world's shortage of steel. The enormous tonnage of vessels sunk by the undersea raiders necessitated replacement by new ships, and in the summer of 1917 purchases of ship plate became so heavy that this particular product sold in some instances at twelve cents a pound or more, compared to an average price of around one and a quarter cents before the war.

United States Steel's management, however, notwithstanding its desire to show large profits to stockholders, could not, consistently with the price policy it had followed for many years, countenance these extravagant prices. Its quotations at no time were as high as 50 per cent. of these levels. It steadfastly set its face against taking advantage of the world's need to exact the highest prices the market could bear. Nevertheless, it showed enormous profits and paid large dividends to stockholders during the period.

One branch of the steel industry that was immensely stimulated by the war was by-product coke production. In this particular field Germany had led the world for years, although it was not until the war started that the other nations realized her secret object in fostering the development of these by-products and had brought home to them the cost of their neglect in this respect.

Coke by-products, benzol, toluol, xylol, etc., form the bases of practically all modern explosives. They also form the bases for modern dyes. And Germany for years had studiously cultivated the color markets of the world, and encouraged her manufacturers and scientists to increase production of these bases and to refine processes until she had practically eliminated competition in dyes.

Other countries, lacking in militarism as well as in foresight, did nothing to assist the development of this industry. They failed to see that in eliminating competition in dyes in peace time Germany left her intended victims without the means of making explosives in wartime. She could well afford, her intentions being what they were, to sell the world dyes even at a loss, believing as she did that the result was to give her a death grip on the throats of all possible enemies.

Fortunately, Germany was not able to achieve complete success. And it was the United States Steel Corporation that, more than any other single factor in this country, stood in her way.

Many years before the war, the Corporation's management, realizing the value of saving the by-products of coal, had itself started to develop this field, and it was therefore a comparatively simple thing for it to make necessary additions to by-product plants to turn out the benzol, toluol, and other products which go into high explosives. Within a comparatively short time after the conflict started the Corporation was producing these materials at the rate of 10,000,000 gallons a year, and by the time the war closed it had increased its capacity to around 40,000,000 gallons.

Hand in hand with the development of this branch of the steel industry the American dye industry grew. In this respect, at least, Germany benefited the world. But, it might be stated parenthetically, our dye industry is not yet strong enough to stand of itself against the German competition that will most certainly be renewed. It is to be hoped that the Government of the United States will never forget the lesson learned in the war, and will lend American dye manufacturers encouragement at least sufficient to make it certain that no possible future attack will find us unready in the matter of explosive production.

The years 1916 and 1917 were by far the most profitable ever enjoyed by the Steel Corporation. In the final quarter of 1916 net earnings reached the unprecedented figure of $105,917,438 while earnings for the year were $333,574,177.

And that earnings for 1917 did not exceed those of the previous year was due only to the imposition in that year of excess profits taxes. In 1917 the Corporation, after deducting over $233,000,000 from earnings to cover these taxes, showed a balance of $295,292,180. In other words, its earnings before taxes were close to $530,000,000.

On April 6, 1917, the United States became a participant in the struggle which had now come to be called the "World War." And shortly after this occurred American steel manufacturers were called upon to sacrifice to patriotism part

of their profits and to sell steel to the Government, its Allies, and the public at prices considerably lower than those which would otherwise have been obtainable in the open market.

J. Leonard Replogle was appointed Director of Steel Supplies, and he, in conjunction with the War Industries Board appointed by the President to regulate and coördinate for war purposes the supply of industrial products generally, met with the steel manufacturers early in September of that year and agreed on a scale of prices for steel which, in the case of some products at least, were less than half those quoted in the open market.

It is a matter of gratification that our steel manufacturers, nearly all of them, responded freely and patriotically to the Government's request. And of them all there was none that showed more willingness to assist Mr. Replogle in his difficult task of fixing a fair scale of steel prices than United States Steel. As a matter of fact, the prices eventually agreed on were not very far away from those being charged by the big company, which had for many months been consistently below the market established by its competitors.

Throughout 1918 this scale of prices was maintained with no important change. On several occasions increases or adjustments were requested by various manufacturers, but never by the Steel Corporation. And there is ground for the belief that it was the assistance of this company that enabled the representatives of the Government to resist the pressure sometimes brought to bear to secure an adjustment upward. In any event, the profits of all producers during the period in which prices were fixed proved clearly that no such increases were necessary to permit the manufacturers substantial profits.

In fact, all steel companies enjoyed large earnings in 1918. United States Steel showed net profits for the year, after an appropriation for taxes of $274,277,835, of $199,350,680.

The immense war profits piled up by the big company in

the three years, 1916 to 1918, permitted more liberal distribution to shareholders, and for some time extra dividends were paid, making total disbursements 8¾ per cent. in 1916, 18 per cent. in 1917, and 14 per cent. in 1918. Throughout the whole period, however, the regular rate of dividends did not change from 5 per cent. which it still is.

In 1918 the Steel Corporation's sales grew to the largest volume on record, $1,288,029,255 or, including inter-company sales, $1,692,572,000.

During the war boom the rights of the worker had not been forgotten. Early in 1916, as soon as the improvement in industry became evident, a wage advance of 10 per cent. was put into effect. Since the beginning of the war, and up to the date of writing, wages of common labor have been advanced as follows:

DATE OF INCREASE	PERCENTAGE OF INCREASE	CUMULATIVE PERCENTAGE AS COMPARED WITH 1915 WAGE
Feb. 1, 1916	10	10
May 1, 1916	13.6	25
Dec. 15, 1916	10	37.5
May 1, 1917	9	50
Oct. 1, 1917	10	65
April 16, 1918	15	90
Aug. 1, 1918	10.5	110
*Oct. 1, 1918	10	131
Feb. 1, 1920	10	153

*This figure based on ten-hour day. At this time basic day was changed to eight hours and time and a half paid for overtime.

With the signing of the armistice on November 11, 1918, new problems were presented to American industry generally and the steel trade was not exempt. Not even the most far-sighted could tell with any assurance what would be the effect of the letting up in war demand. It was realized that capacity had been greatly increased to meet war needs

for steel and it was questioned whether a normal peace demand would be sufficient to keep the mills employed. Moreover, the trade, recognizing that a readjustment from a war to a peace basis was inevitable, asked when it would occur and how long it would last.

In view of these uncertainties many steel manufacturers felt that Governmental regulation of prices should be continued temporarily, and at a meeting in Washington with the War Industries Board and the Director of Steel Supplies, Judge Gary representing the trade, offered to submit a new scale of prices to replace those in effect during the war. The Government's representatives, however, took the viewpoint that it would be better to let prices be regulated only by the law of supply and demand, and left the manufacturers free to sell steel at whatever levels they could obtain.

Nevertheless, the trade put into effect the suggested new scale and this continued to operate for about four months. This scale averaged about $7.00 a ton lower than the prices obtaining under Government control.

But peace was to bring yet another reduction in prices. About the beginning of March, 1919, President Wilson, taking the stand that deflation of prices generally was necessary before business could return to normal, and that this deflation could be regulated and made orderly if the Government assisted, appointed an Industrial Board at the head of which was George N. Peek, to bring about the desired results. The steel manufacturers were called upon first to coöperate with this Board, and they responded readily. On March 20th a new scale of prices, about $5.00 a ton below the levels existing in the first part of the year, and about $12.00 a ton below the War Industries Board prices, was agreed to.

But the settlement of steel prices was the only thing ever accomplished by the Board. The President's plans for regulated deflation came to naught.

Prior to their conferences with Mr. Peek the steel men had

been given to understand that if a price scale satisfactory to both sides could be reached the Railroad Administration, then operating all the country's transportation systems, would place necessary orders for steel, and this understanding accounted in large part for their readiness to meet the Government representatives halfway.

The railroads, it was generally recognized, needed steel badly for rails, cars, locomotives, and other equipment. For years their purchases had been entirely inadequate to meet the growing needs of the country's commerce, and their potential demand was therefore very large. In the then period of uncertainty it was felt that the purchasing of these railroad supplies would steady business and stimulate other demands, acting as a safety valve against a possible depression.

But the Railroad Administration declined to honor the promise, expressed or implied, of the Government. Director-General Walker D. Hines claimed that the prices agreed on for rails were unreasonably high and the three-cornered dispute that followed between Mr. Hines, Mr. Peek, and the railmakers resulted in the dissolution of the Industrial Board and the withdrawing by the Government from any attempt to regulate the price of steel or other commodities. Followed a period of general business uncertainty, a let-up in buying activities felt keenly by the steel mills. The responsibility for this situation must be placed largely at the door of the Railroad Administration. The roads, with the possible exception of the farmers, are the largest consumers of steel and of many other products in the country. Prosperity was hardly possible in steel trade without railroad buying, that is, under normal conditions. There was no question that the railroads were exceedingly short of supplies and the practically unanimous opinion was that if they began to place orders covering their requirements it would have a stimulating effect on business generally and would dissolve the doubt

and hesitation that hung over the financial world during the period of transition from war to peace.

But the Railroad Administration declined to make any move. One of its highest officials informed the writer, who pointed out to him the importance of some definite action to help restore business balance, that he did not consider it the Railroad Administration's duty to in any way "hold the bag" for business.

Ostensibly, the Railroad Director based his refusal to place orders for rails and other material required by the roads on the ground that prices were too high. There is little question that he and his associates believed that, by holding off, the steel companies would be forced to reduce prices further to induce railroad buying. The result must have been a severe disappointment, for when the roads did begin to buy, they had to pay, for a substantial part of the tonnage purchased, prices $10.00 a ton or more higher than those agreed on by the Industrial Board, though the Steel Corporation has consistently maintained the Industrial Board prices.

As a matter of fact, the end of the war found the whole world starving for steel. For five years steel needed for a million uses of commerce had been diverted to the terrible business of war. And it did not take long for this dammed-up demand to begin to make itself felt. By the early part of October pulses of business were again beating firmly, and by the beginning of 1920 a peace boom had taken the place of the war boom that ended at the close of 1918.

For the year 1919 the Corporation, despite the brief depression the steel trade went through, reported earnings of $143,589,062 (after deducting interest and obligations of subsidiary companies), and a balance available for dividends of $76,794,582. Earnings on the common stock were $51,574,905, or the equivalent of $10.20 per share.

In the early part of 1920 the steel trade enjoyed a boom that approached that experienced during the war. The world was filling its most pressing requirements of material of which it had been starved while the products of industry were going into munitions and other war needs. Steel prices ascended to the highest levels attained since 1917, although the Corporation maintained the lower levels fixed by the Industrial Board in March, 1919. The closing months of the year, however, witnessed a sharp depression, and at the close of the period the so-called independent companies were operating at a very low rate of capacity with practically no forward orders. The Corporation, because of its price policy earlier in the year, went into 1921 with its order books filled and with operations at fully 90 per cent. of capacity.

Earnings of the Corporation for 1920 were $177,126,126 and the net for the junior stock was equivalent to $16.70 a share. Production of steel ingots was approximately 19,278,000 tons and of finished steel 14,233,000 tons.

The events of the closing months of 1920 completely vindicated the judgment of Judge Gary and his associates, both on the matter of prices and in their preparation for the inevitable reaction of the earlier boom period. During the previous three years the Corporation had been steadily creating a reserve for anticipated inventory losses, this reserve amounting to $90,000,000 at the end of 1919. Thus, when the reaction did arrive the Corporation was not faced with the necessity, as others were, of scaling down inventories with consequent losses of earnings.

Within the past few weeks the independents, who for a year or more had been quoting prices greatly in excess of those charged by the big company, reduced their prices to an average several dollars a ton below the Corporation's, with an accompanying, and substantial, cut in wages (20% to 30%). The Corporation at the time this is written (February 18, 1921) is "still doing business at the old stand" both as regards

prices and wages and is thus safeguarding the interests of both its customers and its employees.

We have now followed the Corporation's fortunes through practically twenty years, seeing it grow stronger and more firmly established both as a manufacturing entity and financially, as well as with the public and particularly with the investor, from year to year. What of the future?

There are, of course, uncertainties at present, and there will be from time to time as the years go by. The history of business has been one of prosperity and depression periodically, and the Corporation is not exempt from the effect of these. But its immense accumulated financial strength, its huge working capital, the good will it has erected among consumers, employees, and the public generally, combined with the fact that it has come scatheless and with increased honor through a bitter attack by the Government, give ample justification for the belief that it will grow and expand along healthy lines and to the increasing financial benefit of stockholders as the years roll on. The Corporation, in the past, has proven itself strong enough to weather business depressions and it is now many times as strong financially and in every other respect as it has ever been.

Conditions in the steel trade are not encouraging for the immediate future. The industry is apparently going through the period of deflation from a war to a peace basis just as are other industries all over the world, but while the immediate future is somewhat cloudy, the outlook for steel, if one looks ahead several years, is unquestionably bright. The world shortage of the metal caused by the war was by no means filled during the period of activity that lasted from October, 1919, to September, 1920. There is every reason to believe that the world still needs steel in immense quantities for the myriad uses in which the metal is employed, not only for future expansion but for replacement which should have occurred during the war years. As soon as the economic and

financial difficulties from which the world is now suffering have been overcome—and the signs on the sky are that these clouds are already being dissipated—a great demand for steel can be prognosticated.

And United States Steel with its twenty-two million odd tons of capacity, its great resources, its good will, and its wonderful organization, will undoubtedly share generously in this anticipated trade revival. For it and for its stockholders the future holds a bright and glowing promise.

Perhaps no better conclusion for this volume can be found than the remark recently made to the writer by one of the leading independent steel makers. He said:

"United States Steel is a remarkable organization. Nothing like it exists or ever existed. It is in a class by itself."

APPENDIX

Comparative Production

Table showing percentage of total steel and iron output of the United States produced by the U. S. Steel Corporation in the years 1901, 1911, 1913, and 1919. Figures for 1901 and 1911 are from the exhibit in the dissolution suit and for 1913 and 1919 from the reports of the American Iron & Steel Institute

	1901	1911	1913	1919
Iron ore from Lake Superior Ranges	61.6	54.3	50.46	45.94
Total iron ore	45.1	45.8	46.37	42.05
Total blast-furnace products	43.2	45.4	45.47	43.97
Steel ingots and castings	65.7	53.9	53.21	49.61
Steel rails	59.8	56.1	55.51	61.96
Heavy structural shapes	62.2	47.0	54.03	43.77
Plates and sheets	64.6	45.7	49.13	44.30
Wire rods	77.6	64.7	58.44	55.42
Total finished products	50.1	45.7	47.81	44.60
Wire nails	65.8	51.4	44.55	51.86
Tin and terne plates	73.0	60.7	58.64	48.44

Summary of earnings and distribution thereof since organization:

Net profits from April 1, 1901 to December 31, 1919	$1,732,070,796
Deductions; special reserves, etc.	32,227,566
Balance of profits	1,699,843,230
Preferred dividends paid (131¼ per cent.)	496,391,722
Common dividends paid (89½ per cent.)	454,908,882
Total dividends paid	951,300,604
Surplus profits	748,542,626
Appropriations for capital expenditures, etc.	280,494,424
Balance of profits carried to surplus account	468,048,202

Summary of undivided surplus:

Surplus or working capital provided at organization	$ 25,000,000
Balance of surplus accumulated to Dec., 1919	468,048,202
Total undivided surplus	493,048,202
Appropriated surplus	280,494,424
Total appropriated and undivided surplus	773,542,626

Table of number of common stockholders as shown by the Corporation's books each quarter since organization in 1901. These figures indicate how the Corporation's junior stock has been widely distributed and how it has grown in favor with investors in recent years particularly.

YEAR	4TH QTR.	3D QTR.	2D QTR.	1ST QTR.
1920	95,776	90,952	87,229	83,583
1919	73,318	73,456	74,071	78,018
1918	72,779	65,862	63,507	61,044
1917	51,689	44,789	43,482	42,564
1916	37,720	40,430	41,156	41,910
1915	45,767	51,169	55,907	56,825
1914	52,785	50,195	47,695	47,221
1913	46,460	44,398	41,324	38,679
1912	34,213	34,645	35,106	36,555
1911	35,011	31,472	29,853	29,235
1910	28,850	28,910	24,435	22,033
1909	18,615	16,861	17,342	21,522
1908	21,093	24,804	27,439	29,563
1907	28,435	20,513	18,539	15,975
1906	14,723	14,879	*———	17,525
1905	20,075	*———	*———	24,531
1904	33,395	35,706	*———	36,980
1903	37,237	34,997	28,987	26,830
1902	24,636	21,321	19,640	17,723
1901	15,887	13,318	———	———

*No figures available.

PRODUCTION (GROSS TONS)

	1902	1903	1904	1905	1906	1907
Ore mined	16,063,179	15,363,355	10,503,087	18,486,556	20,645,148	22,403,801
Coal mined—not for making coke	709,367	1,120,733	1,998,000	2,204,950	1,912,444	3,550,510
Limestone	1,313,120	1,268,930	1,393,149	1,967,355	2,227,436	2,957,163
Coke	9,521,567	8,658,391	8,652,293	12,242,909	13,295,075	12,373,938
Pig Iron, Spiegel and Ferro-Manganese	7,975,530	7,279,241	7,369,421	10,172,148	11,058,526	10,631,620
Bessemer Steel	6,759,210	6,191,660	5,427,979	7,379,188	8,072,655	7,556,460
Open-hearth Steel	2,984,708	2,976,300	2,978,399	4,616,015	5,438,494	5,543,088
Finished Steel	8,197,232	7,635,690	6,792,780	9,226,386	10,578,433	10,376,742
Cement (bbls.)	486,357	644,286	539,951	1,735,343	2,076,000	2,129,700

	1908	1909	1910	1911	1912	1913	1914
Ore mined	16,662,715	23,431,047	25,245,816	19,933,631	26,428,449	28,738,451	17,034,981
Coal mined—not for coke making	3,008,810	3,089,021	4,850,111	5,290,671	5,905,153	6,705,381	5,271,911
Limestone	2,186,007	3,496,071	5,005,087	4,835,703	6,124,541	6,338,509	4,676,479
Coke Manufactured—Beehive	7,591,062	11,896,211	11,641,105	9,491,206	11,544,840	11,062,138	7,092,792
Coke Manufactured—By-product	578,869	1,693,901	2,008,473	2,629,006	5,164,547	5,601,342	4,081,122
Pig Iron, Spiegel, etc.	6,934,408	11,618,350	11,831,398	10,744,897	14,186,164	14,080,730	10,052,457
Bessemer Steel	4,055,275	5,846,300	5,796,223	5,055,696	6,643,147	6,131,809	4,151,510
Open-hearth Steel	3,783,438	7,508,889	8,383,146	7,697,674	10,258,076	10,524,552	7,674,966
Finished Steel	6,206,932	9,859,660	10,733,995	9,476,248	12,506,619	12,374,838	9,014,512
Cement (bbls.)	4,535,300	5,786,000	7,001,500	7,737,500	10,114,500	11,197,000	9,116,000

	1915	1916	1917	1918	1919
Ore mined	23,669,676	33,355,169	31,781,769	28,332,939	25,423,093
Coal mined—not for making coke	5,828,278	6,162,430	6,942,298	6,354,980	5,937,487
Limestone	5,795,925	7,023,474	6,494,917	5,141,365	5,835,289
Coke—Beehive	9,701,692	12,479,160	11,177,247	9,962,403	5,933,056
Coke—By-product	4,799,126	6,422,802	6,284,428	7,795,233	9,530,593
Pig iron, Spiegel, etc.	13,641,508	17,607,637	15,652,928	15,940,954	13,637,504
Bessemer Steel	5,584,198	7,273,766	6,405,390	5,630,246	4,788,242
Open-hearth Steel	10,792,294	13,636,823	13,879,671	13,953,247	12,412,131
Finished steel	11,762,639	15,460,792	14,942,911	13,849,483	11,997,935
Cement (bbls.)	7,648,658	10,425,600	10,917,000	7,287,000	9,112,000

INCOME AND DISBURSEMENTS

	NET INCOME	NET FOR STOCK	PFD. DIVIDEND	COMMON DIVIDEND		APPROPRIATIONS	SURPLUS
				RATE %	AMOUNT		
1901 (9 mos.)	$ 84,779,298	$61,395,203	$26,752,894	3	$15,227,812	———	$19,414,497
1902	133,308,764	90,306,524	35,720,177	4	20,332,690	———	34,253,657
1903	109,171,152	55,416,653	30,404,173	2½	12,707,563	———	12,304,917
1904	73,176,522	30,267,529	25,219,677	—	———	———	5,047,852
1905	119,787,658	68,585,492	25,219,677	—	———	26,300,000	17,065,815
1906	156,624,273	98,128,587	25,219,677	2	10,166,050	50,000,000	12,742,860
1907	160,964,674	104,565,564	25,219,677	2	10,166,050	54,000,000	15,179,837
1908	91,847,710	45,728,714	25,219,677	2	10,166,050	———	10,342,987
1909	131,491,414	79,073,695	25,219,677	4	20,332,100	18,200,000	15,321,918
1910	141,054,755	87,407,186	25,219,677	5	25,415,125	26,000,000	10,772,384
1911	104,305,466	55,300,296	25,219,677	5	25,415,125	———	4,665,495
1912	108,174,673	54,240,049	25,219,677	5	25,415,125	———	3,605,247
1913	137,181,345	81,216,985	25,219,677	5	25,415,125	15,000,000	15,582,184
1914	71,663,615	23,496,768	25,219,677	3	15,249,075	———	*16,971,984
1915	130,396,012	75,833,833	25,219,677	1¼	6,353,781	———	44,260,374
1916	333,674,177	271,531,730	25,219,677	8¾	44,476,469	———	201,835,585
1917	295,292,180	224,219,565	25,219,677	18	91,949,450	55,000,000	52,505,438
1918	199,350,680	137,532,377	25,219,677	14	71,162,350	———	†28,935,350
1919	143,589,062	76,794,582	25,219,677	5	25,415,125	———	26,159,780
1920††	177,174,126	110,136,105	25,219,677	5	25,415,125	———	59,501,303

*Deficit.
†After deducting $12,215,000 special allowance for amortization of war plants.
††Figures subject to adjustment.

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